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THE SPIDERS OF NEWFOUNDLAND

BY

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WITH 5 MAPS AND 121 FIGURES IN THE TEXT

HELSINGFORSIAE 1954

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TILGMANNS TRYCKERI

Contents.

Introduction.

In the year 1949 a Finnish-Swedish biological expedition, supported by the Arctic Institute of North America, visited Newfoundland. During the time from June 1 to September 1 a large collection of terrestrial arthropods was obtained from numerous places in the country. The spiders were collected mainly by Dr. ERNST PALMÉN but also by Prof. CARL H. LINDROTH. The whole spider material, more than 300 samples, many of them containing numerous species, was handed over to me for determination in December, 1949. Later I received additional spider material from Newfoundland collected by Prof. LINDROTH in summer, 1951.

The spider fauna of Newfoundland has been very little studied before. Only a few scattered records are to be found in the literature. This also applies to other groups of arthropods of the country. The main purpose of the expedition was not only to fill a gap in the knowledge of the fauna of a nearctic area, but also to make a comparison with the arthropod fauna of Northern Europe.

In the determination work I have encountered many difficulties. It has not been easy to obtain access to all the American spider literature necessary. I am much indebted to Dr. WILLIS J. GERTSCH (the American Museum of Natural History, New York), who has kindly sent me specimens of American spiders for comparison and determined certain difficult species. The large

file of reprints which I have received from him has aided me greatly in the work. I wish also to acknowledge my thanks to Dr. RALPH V. CHAMBERLIN (Utah University), Dr. ALLAN F. ARCHER (Alabama University), Prof. BENJAMIN H. KASTON (Teachers College, Connecticut) and Prof. HERBERT W. LEVI (Wisconsin University) for their help with literature on American spiders. Further thanks are due to Dr. ÅKE HOLM (Uppsala, Sweden), who has lent me material of several spider species for comparison.

The types of the species described in this paper as new to the science are going to be deposited in the Canadian National Collections, Departm. of Agriculture, Ottawa.

I. Check list.

In the material from Newfoundland collected in 1949 and 1951 I have found 218 species. To these the following two species are to be added: *Araneus diadematus* Clerck mentioned by WIEHLE (1931) from Newfoundland and *Dietrichia hesperia* Crosby & Bishop (?) from the collection of the American Museum of Natural History, New York and taken by R. Traub in Newfoundland in 1947. In the following list of species from Newfoundland I have put in only some of the synonymic names.

Theridiidae

Ctenium riparium (Keyserling) 1886
» banksi Kaston 1946
» boreale Kaston 1946
» fuscum (Emerton) 1894
Crustulina borealis Banks 1900 = ? *C. sticta* (O.P.-Cambridge) 1861
Steatoda bipunctata (Linné) 1758
Theridula sphaerula (Emerton) 1882 = ? *T. opulenta* (Walckenaer) 1841
Theridion tectum (Keyserling) 1884 = *Enoplognatha puritana* Chamberlin & Ivie 1942
» aurantium Emerton 1915
» sexpunctatum Emerton 1882
» (Allotheridion) montanum Emerton 1882
» » glaucescens Becker 1879 = *T. spirale* Emerton 1882
» » murarium Emerton 1882 (?)

Nesticidae

Nesticus pallidus Emerton 1875

Linyphiidae

Stemonyphantes blauveltae Gertsch 1951
Pityohyphantes costatus (Hentz) 1850

Linyphia marginata C. L. Koch 1834
» waldea Chamberlin & Ivie 1943
Pusillia mandibulata (Emerton) 1882 = ? *P. pusilla* ssp. *m.*
Estrandia grandaeva (Keyserling) 1886 = *E. nearctica* (Banks) 1910
= *Linyphia tridens* Schenkel 1930
Helophora insignis (Blackwall) 1841
» ontariensis (Emerton) 1925
Lepthyphantes leprosus (Ohlert) 1865
» zebra (Emerton) 1882
» alpinus (Emerton) 1882
» subalpinus (Emerton) 1882
» calcaratus (Emerton) 1909
» bihamatus (Emerton) 1882
» triramus Chamberlin & Ivie 1947
» nigriventris (L. Koch) 1879 (?)
» umbraticola (Keyserling) 1886 = *L. audax* Soerensen 1898
Bathyphantes pullatus (O. P.-Cambridge) 1863 = *B. kuratai* Chamberlin & Ivie 1947
» concolor (Wider) 1834
» brevipes (Emerton) 1917
» pallidus (Banks) 1892
» sp (pr. *reprobus* (Kulczinsky) 1916)
» brevis (Emerton) 1911 = *Bathyphantoides b.*
» gracilis (Blackwall) 1841
» rufulus n.sp.
Oreonetides vaginatus (Thorell) 1872 = *Aigola crassimana* (Emerton) 1882
= *Congylidium tuberosum* Emerton ♂ (non ♀) 1916
» flavescens (Crosby) 1937 = *Aigola f.*
Meioneta sp. (pr. *rurestris* C. L. Koch)
Argyneta cauta (O. P.-Cambridge) 1902 = *A. olivacea* (Emerton) 1882
» decora (O. P.-Cambridge) 1871 (?)
Centromerus bicolor (Blackwall) 1833
» sylvaticus (Blackwall) 1841 = *C. quinquedentata* (Emerton) 1882
» persolutus (O. P.-Cambridge) 1875
» cornupalpis (O. P.-Cambridge) 1875
» longibulbus (Emerton) 1882
» latidens (Emerton) 1882

Micryphantidae

Sciastes truncatus (Emerton) 1882
Eulaira concava (Emerton) 1882
» mircotarsa (Emerton) 1882
Diplocentria bidentata (Emerton) 1882 = *Scotoussa b.* = *Diplocentria rivalis* (O. P. — Cambridge 1905)
» corynetes Chamberlin & Ivie 1945
Scironis tarsalis (Emerton) 1911
Scylaceus obtusus (Emerton) 1911
Tapinocyba simplex (Emerton) 1882
» scopulifera (Emerton) 1882

Tapinocyba lindrothi n.sp.
» exigua n.sp.
Dietrichia hesperia Crosby & Bishop 1933 (?)
Thyreosthenius parasiticus (Westring) 1851 = *Hormathion limnatum* Crosby & Bishop 1933
Islandiana alata (Emerton) 1919
Erigone atra (Blackwall) 1833
» dentigera O. P.-Cambridge 1874
» blaesa Crosby & Bishop 1928
» aletris Crosby & Bishop 1928
» whymperi O. P.-Chambridge 1877 (?)
» ephala Crosby & Bishop 1928
Eperigone maculata (Banks) 1892
» contorta (Emerton) 1882
» trilobata (Emerton) 1882
Collinsia pertinens (O. P.-Cambridge) 1875 = *Catabrithorax p.*
» clypiella (Chamberlin) 1920 = *Catabrithorax c.*
» stylifera (Chamberlin) 1848 = *Catabrithorax s.*
» palmeni n.sp.
Hilaira herniosa (Thorell) 1875 = *Utopiellum mirabile* (L. Koch) 1879
» mentasta (Chamberlin & Ivie)1947 = »*Erigone*» *m.*
» algida n.sp.
» dubia n.sp.
» aquilonia n.sp.
Spirembolus oreinoides Chamberlin 1948 (?)
Soudinus canaliculatus (Emerton) 1915
Tunagyna debilis (Banks) 1892
Sisicottus montanus (Emerton) 1882
Trachynella nudipalpis (Westring) 1851
Walckenaera vigilax (Blackwall) 1853 = *Spiropalpus spiralis* Emerton 1882
Cornicularia minuta Emerton 1882
» cuspidata (Blackwall) 1833 = *C. brevicula* Crosby & Bishop 1931
» karpinskii (O. P. – Cambridge) 1873
» unicornis (O. P. – Cambridge) 1861
» auranticeps Emerton 1882
Tigellinus tricornis Emerton 1882 (?)
Entelecara abrupta (Emerton) 1909 = *Mythoplastoides a.*
» exigua (Banks) 1892 = *Mythoplastoides e.*
Minyriolus castaneus (Emerton) 1882
Eridantes erigonoides (Emerton) 1882
Diplocephalus cuneatus (Emerton) 1909 = *Chocorua c.*
» cristatus (Blackwall) 1833
Dismodicus bifrons ssp. decemoculatus (Emerton) 1882 = *D. variegatus* Jackson 1937
= *D. modicus* Chamberlin & Ivie 1947
» alticeps Chamberlin & Ivie 1947
Hypomma marxii (Keyserling) 1886
Hybocoptus denticulatus (Emerton) 1915 = *Gongylidium tuberosum* ♀ (non ♂) Emerton 1915
Zornella cultrigera (L. Koch) 1879
Oedothorax montiferus (Emerton) 1882

Gramnonota pictilis (O. P. – Cambridge) 1875
» gigas (Banks) 1896
» maritima Emerton 1915
Souessa spinifera (O. P. – Cambridge) 1874
Trichopterna mengei (Simon) 1884 = *Pelecopsis excavatum* (Emerton) 1911
Ceraticelus similis (Banks) 1892
» laetabilis (O. P. – Cambrigde) 1874
» fissiceps (O. P. – Cambridge) 1874
» atriceps (O. P. – Cambridge) 1874
Ceratinella brunnea (Emerton) 1882
Maso sundevalli (Westring) 1851 = *Caseola herbicola* Emerton 1909
Porrhomma gertschi n.sp.

Araneidae

Meta menardi (Latreille) 1804
Metepeira palustris Chamberlin & Ivie 1942
Cyclosa conica (Pallas) 1772
Singa variabilis Emerton 1884
Zygiella montana (C. L. Koch) 1834 = *Zilla m.*
Araneus diadematus (Clerck) 1757
» solitarius (Emerton) 1884
» corticarius (Emerton) 1884
» cornutus Clerck 1757
» patagiatus Clerck 1757
» scolopetarius Clerck 1757 = *A. sericatus* Clerck 1757
» trifolium (Hentz) 1847
» displicatus (Hentz) 1847

Theridiosomatidae

Theridiosoma radiosum (Emerton) 1884 = ? *T. gemmosum* (L. Koch) 1877

Tetragnathidae

Pachygnatha brevis Keyserling 1883
Tetragnatha laboriosa Hentz 1850
» extensa (Linné) 1758
» elongata Walckenaer 1805
» vermiformis Emerton 1884 (?)
» caudata Emerton 1884

Mimetidae

Ero canionis Chamberlin & Ivie 1935

Agelenidae

Coras montanus (Emerton) 1890
Agelenopsis utahana (Chamberlin & Ivie) 1933
Cryphoeca montana Emerton 1890

Hahniidae

Hahnia cinerea Emerton 1890
Antistea brunnea (Emerton) 1890
Neoantistea agilis (Keyserling) 1887
» riparia ssp. radula (Emerton) 1890

Pisauridae

Dolomedes fulv(i)atronotatus Bishop 1924
» scopularis C. L. Koch 1848 = *D. triton sexpunctatus* Hentz 1845
» vittatus Walckenaer 1837

Lycosidae

Pirata minutus Emerton 1885
» montanus Emerton 1885
» bryantae Kurata 1944
» piraticus (Clerck) 1757
» insularis Emerton 1885 = *piccolo* Dahl 1908
Alopecosa aculeata (Clerck) 1757 = *Lycosa beanii* Emerton 1894
Arctosa quinaria (Emerton) 1885
» emertoni Gertsch 1934
» virgo (Chamberlin) 1925
» alpigena (Doleschall) 1852
Trochosa terricola ssp. pratensis (Emerton) 1885
Pardosa moesta Banks 1892
» lapidicina Emerton 1885
» furcifera (Thorell) 1875
» concinna (Thorell) 1877
» fuscula (Thorell) 1875
» groenlandica (Thorell) 1872
» mackenziana (Keyserling) 1876
» xerampelina (Keyserling) 1876
» saltuaria (L. Koch) 1870

Gnaphosidae

Gnaphosa muscorum (L. Koch) 1866 = *G. gigantea* Petrunkewitch 1911
» parvula Banks 1896
Haplodrassus signifer (C. L. Koch) 1839
» hiemalis (Emerton) 1909
Orodrassus vastus Chamberlin & Ivie 1922
Drassodes neglectus (Keyserling) 1887
Zelotes subterraneus (C. L. Koch) 1839 = *Prosthesima atra* Emerton 1890

Clubionidae

Clubiona riparia L. Koch 1866
» bryantae Gertsch 1941
» obesa Hentz 1847
» mixta Emerton 1890

Clubiona canadensis Emerton 1890
» norvegica Strand 1900
» kulczynskii De Lessert 1905 = *intermontana* Gertsch 1933
» abbotii L. Koch 1866
» furcata Emerton 1919
Agroeca ornata Banks 1892
Micaria pulicaria (Sundevall) 1832 = *M. gentilis* Banks 1896 = *M. montana* Emerton 1890
» longispina Emerton 1911

Xysticidae

Misumena vatia (Clerck) 1757
Coriarachne versicolor Keyserling 1880
Oxyptila americana Banks 1895
» bryantae Gertsch 1939 (?)
Xysticus triguttatus Keyserling 1880
» discursans Keyserling 1880
» elegans Keyserling 1880
» emertoni Keyserling 1880
» canadensis Gertsch 1934

Philodromidae

Philodromus pernix Blackwall 1846
» rufus Walckenaer 1825
Thanatus formicinus (Clerck) 1757 (?) = *T. lycosoides* Emerton 1892
= *canadensis* Gertsch 1933
Tibellus maritimus (Menge) 1874

Salticidae

Salticus scenicus (Clerck) 1757
Neon nellii Peckham 1883
Sitticus palustris (Peckham) 1883
» striatus Emerton 1911
Evarcha hoyi (Peckham 1883)
Metaphidippus montanus (Emerton) 1891
» flavipedes (Peckham) 1888
Phidippus purpuratus Keyserling 1884
» princeps (Peckham) 1883
» whitmanii Peckham 1888

Dictynidae

Argenna obesa Emerton 1911
Dictyna annulipes Blackwall 1846 = *D. muraria* Emerton 1888
» bostoniensis Emerton 1888
» brevitarsa Emerton 1915
» phylax Gertsch & Ivie 1936 (?)

Amaurobiidae

Callobius bennetti (Blackwall) 1846
Walmus borealis (Emerton) 1909
Callioplus tibialis (Emerton) 1888
» euoplus Bishop & Crosby 1935.

II. Taxonomic remarks and descriptions of new species.

Crustulina borealis Banks

This species is probably identical with *C. sticta* Cambr., described from Europe. The matter is not, however, definitely settled, as no actual comparison of American and European material has been made (see GERTSCH & ARCHER 1942, KASTON 1948). As I have no material available of *C. sticta* I must leave this question open, but I have used the name *C. borealis* for the Newfoundland specimens.

Theridula sphaerula Hentz

This species has been regarded by several arachnologists as identical with *T. opulenta* Walck. which is widely distributed in the southern parts of the Palearctic region. ARCHER (1940), on the other hand, declares that the genitalia of these two species are different but mentions no details. I have followed him and considered them as distinct species.

The genus **Theridion**

ARCHER (1950) has split up the old genus *Theridion* in to several new genera mainly based on differences in the embolic division of the male palpus. I have prefered to use the name *Theridion* in the old wider sence, but like ARCHER (op.c.) I have included the genus *Enoplognatha* in *Theridion* as a synonym. ARCHER's new generic names are mentioned in parentheses for the species in question.

Linyphia waldea Chamb. & Ivie, **Pityohyphantes costatus** Hentz and **Pusillia mandibulata** Emerton.

Until the last ten years these three species have been regarded as identical with the respective European species *Linyphia clathrata* Cl., *Pityohyphantes phrygianus* C. L. Koch and *Linyphia pusilla* Sund. In these three pairs of closely related species clear distinguishing palpal characters are to be found, at least in a comparison between material from Newfoundland and Northern Europe (see, for example, figs. 120, 121). *Linyphia waldea* is an eastern spe-

cies in North America and there is a considerable gap between the ranges of this species and *clathrata* of the Old world. The other two pairs of species constitute a somewhat different case. *Pityohyphantes costatus* is replaced in Western North America by 4 allopatric species, one of which, *P. subarcticus* Chamb. & Ivie (Manitoba, Alaska), comes very close to *P. phrygianus* of the Old world. The American »*Linyphia pusilla*» of BLAUVELT (1936) and other earlier authors has been split by CHAMBERLIN and IVIE (1943) into three species, *mandibulata* Emert., *dana* Chamb. & Ivie and *bonita* Chamb. & Ivie. In addition to this *mandibulata* is divided in to three subspecies, *mandibulata, provoana* Chamb. & Ivie and *punctata* Chamb. & Ivie. The whole species group is considered as a genus, *Pusillia,* including a more distinct species, *cayuga* Emerton. The western species, *P. bonita* comes very close to *P. pusilla* from Asia and Europe. It may be mentioned that SCHENKEL (1950) uses the names *Pityohyphantes phrygianus* and *Linyphia pusilla* for specimens from Western North America. It seems to me not unlikely that at least in the latter case we have to do with polytypic holarctic species forming geographical races. The species of the *Pusillia pusilla — mandibulata* group do not much overlap each other's hitherto known ranges. A second fact to be noted is that the differences in the male palpus of *pusilla, bonita* and *mandibulata* are more quantitative than qualitative and may have something to do with allometric growth. The material of *mandibulata* from Newfoundland is, however, too small for a biometric analysis.

Estrandia grandaeva Keys.

This species, also described under the names *Linyphia humilis* Emerton 1894 (nom. praeocc.) and *L. nearctica* Bankes 1910, is not a purely nearctic one. I have found that *Linyphia tridens* Schenkel, described from Kamchatka and also known from Northern Fennoscandia, is identical with this species. The male palpus and the epigynum of *E. grandaeva* from Newfoundland show no significant difference from these organs in *E. tridens* as figured by SCHENKEL (1930). I have also had a *tridens* female from Kuusamo (NE Fennoscandia) for comparison with females from Newfoundland.

Lepthyphantes triramus Chamberlin & Ivie. (figs. 1—3).

In the material from Newfoundland there are two female specimens which I have identified as *Lepthyphantes triramus* Chamb. & Ivie. This species has hitherto been known only from NW Canada and Alaska (CHAMBERLIN & IVIE 1947). I have figured the epigynum of one of the specimens (B u r g e o — L a P o i l e : Recontre West, leg. C. H. Lindroth) in figs. 1—3.

Measurements:

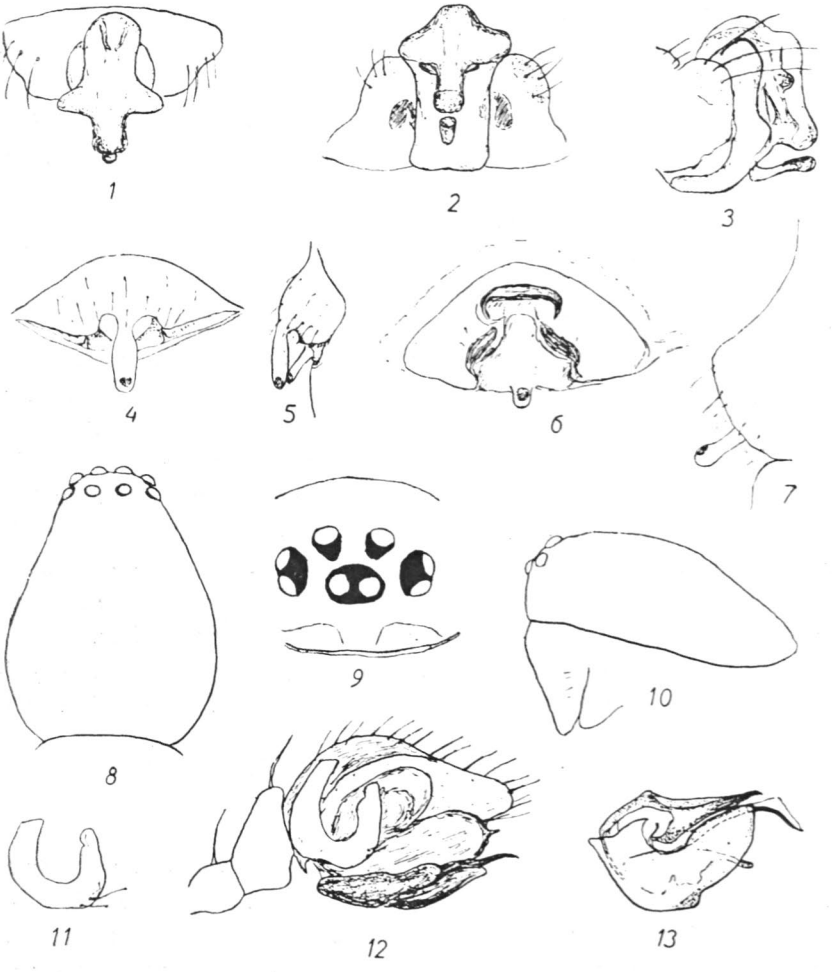


Fig. 1—3 *Lepthyphantes triramus* Chamb. & Ivie, epigynum. Fig. 1 ventral, fig. 2 caudal and fig. 3 lateral view. Fig. 4—5 *Bathyphantes* sp. pr. *reprobus* Kulcz. Fig. 4 ventral, fig. 5 lateral view. Fig. 6—13 *Bathyphantes rufulus* n.sp. Fig. 6 epigynum ventrocaudal view, fig. 7 the same, lateral view, fig. 8 female carapace, dorsal view, fig. 9 ocular area, frontal view, fig. 10 female cephalothorax, lateral view, fig. 11 paracymbium, fig. 12 male palpus, lateral view, fig. 13 embolic division.

	Specimens from Newfoundland	Holotype from Alaska
Carapace, length	1,25 mm.	1,33 mm.
» width	0,95 mm.	1,05 mm.
First leg, tibia – patella	2,05 mm.	2,13 mm.
Fourth leg, » »	1,65 mm.	1,84 mm.

The measurements are the same for both Newfoundland specimens.

Bathyphantes sp. pr. *reprobus* Kulczynski (figs 4 and 5).

In the Newfoundland material there are 3 specimens of a Bathyphantes which is in epigynal characteres very similar to *reprobus* KULCZYNSKI (1916, Siberia) but differens remarkably in size and also in some minor characters. The carapace length in the specimens from Newfoundland is 1,2 mm. in *reprobus* from Siberia 1,8 mm. It is possible that the specimens from Newfoundland belong to a new species.

The genus **Bathyphantoides** Kaston.

KASTON (1948) has created this genus for *Bathyphantes brevis* Emerton, because he has found in his specimens an unusual position of the spiracles (removed from the base of the spinnerets a distance of about one third that between spinnerets and epigastric furrow). I have, however, failed to find in the specimens from Newfoundland (determination controlled by Dr. GERTSCH) any spiracle in the position mentioned by KASTON. If the position of the spiracle is a variable character, there is no reason else to keep up *Bathyphantoides* as a separate genus. I have used here the genus name *Bathyphantes* for *brevis* Emerton.

Bathyphantes gracilis Bl. (figs. 14—18).

This species is hitherto not known from the Nearctic region. The two female specimens in the material from Newfoundland do not differ from the North European specimens I have had for comparison. The epigynum of one of the specimens from Newfoundland (G r a n d F a l l s : Badger, leg. Lindroth) is shown in fig. 16—18.

Bathyphantes rufulus n.sp. (figs. 6—13).

♀ — Total length 2 mm. Carapace bright orange without any markings. The shape of the carapace and size and position of the eyes are demonstrated in figs. 8—10. Sternum and labium orange-yellow, endites and chelicerae of the same colour. Front margin of the fang groove with three teeth, hind margin with three denticles. Legs and palpi orange-yellow. Femora I—II with one dorsal spine. Femur I has, in addition to this, a mesal spine. Femora III—IV without such spines. Tibiae I—IV with 2 dorsal spines. Tibia I—II also with a lateral spine. Metatarsi without spines. Abdomen light brown (in the two specimens from Springdale darker greyish). Spinnerets of the same colour as the abdomen. Epigynum yellow to orange-brown (more chitinised parts). Its structure is shown in figs. 6 and 7.

♂ — Total length about 2 mm. Structure and colour of carapace as in the female. Chaetotaxy of legs as in the female. Front teeth of the fang groove

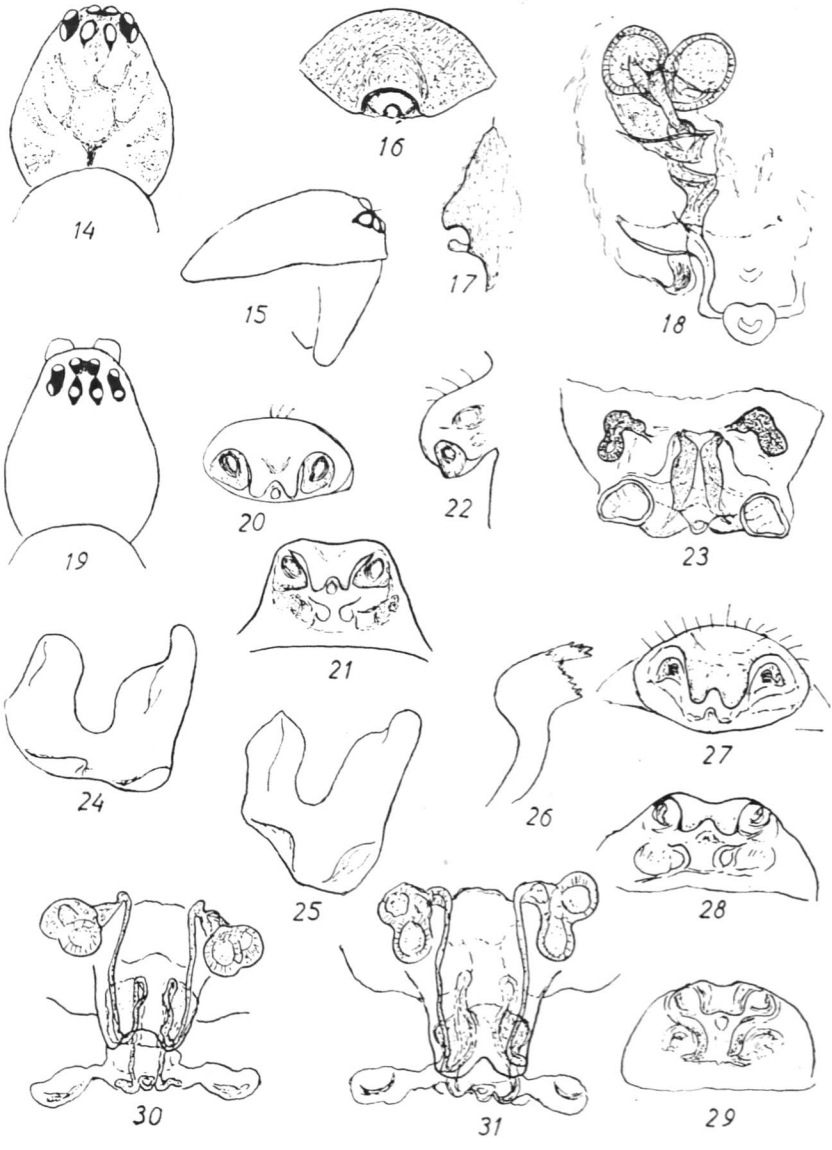


Fig. 14—18 *Bathyphantes gracilis* Bl. Fig. 14—15 cephalothorax, dorsal and lateral view, fig. 16—17 epigynum, ventral and lateral aspect, fig. 18 the left internal parts of the epigynum. Fig. 19—23 *Meioneta* sp. (fr. Port Saunders). Fig. 19 cephalothorax, fig. 20—22 epigynum, ventral, caudal and lateral view, fig. 23 the internal parts of the epigynum. Fig. 24—29 *Argyneta cauta* Cambr. Fig. 24 paracymbium (Newfoundland specimen), fig. 25 the same (Finnish Lapland), fig. 26 lamella characteristica (Newfoundland), fig. 27—28 epigynum (Newfoundland), ventral and caudal aspect, fig. 29 epigynum (Finnish Lapland) caudal aspect, fig. 30—31 the internal epigynal organs, fig. 30 Newfoundland specimen, fig. 31 Finnish specimen.

somewhat stronger than in the female. The structure of the male palpus is demonstrated in figs. 11—13.

Measurements:

	Holotype, ♀	Allotype, ♂	Paratypes, 3 ♀♀	Paratype ♂
Carapace				
length	0,95 mm.	0.93 mm.	0,89—0,93 mm.	0,91 mm.
width	0,70 mm.	0,69 mm.	0,69—0,74 mm.	0,71 mm.
Tibia – patella				
I	1,17 mm.	*	1.05—1,12 mm.	*
IV	1,05 mm.	0,86 mm.	0,99—1,01 mm.	0,86 mm.

Holotype, ♀ NEWFOUNDLAND: Fortune — Hermitage: Push-through 24.6.1949 leg. E. Palmén.

Allotype, ♂ St. Barbe: Eddies Cove West 30.7.1949 leg. E. Palmén. Paratypes from St. Barbe: Lomond and Green Bay: Springdale.

Meioneta sp. pr. *rurestris* C. L. Koch. (figs. 19—21)

Two females of a *Meioneta* sp. unknown to me are taken in NE Newfoundland by Dr. PALMÉN. The internal epigynum parts are somewhat similar to those of *M. rurestris* C. L. Koch from Europe. The internal epigynum parts of the many North American species of this genus are not figured in the literature and I have not taken the risk to describe the species from Newfoundland as new.

The **Argyneta** species (figs. 24—36)

There are two species of this genus from Newfoundland. One of them corresponds well with the description and figures of *A. olivacea* Emert. I have compaired this species with *Argyneta cauta* Cambr. from Europe (specimens from Finnish Lapland) and found them so similar that I have regarded them as conspecific and used the name *cauta*, which has priority. It must be stated that I have had only a single male specimen of *olivacea* (Newfoundland) an one of *cauta* for comparison and only a few females. The male specimen from Newfoundland is slightly bigger (carapace length 0,90 mm.) than the specimen from Lapland (carapace 0,78 mm.).

The other species I have, with some hesitation, identified as *A. decora* Cambr. The median lobe of the epigynum is much narrower than in *cauta* (see figs. 27, 32, 33). The female palpus is tumescent (fig. 34). In my spider material from Finnish Lapland (Utsjoki) I have a female *Argyneta* specimen very similar to the specimens from Newfoundland. The inner epigynal parts of the Finnish one show some minor differences. In the figures (35, 36) these

* In both males the first legs are unfortunately broken at the patella and distal joints lost.

differences look greater than they really are becauce the median parts have not been fixed in quite the same position in the two preparations.

Tapinocyba lindrothi n.sp. (figs. 42—46)

♀ — Total length 1,5 mm. Carapace orange-brown. Its structure and the

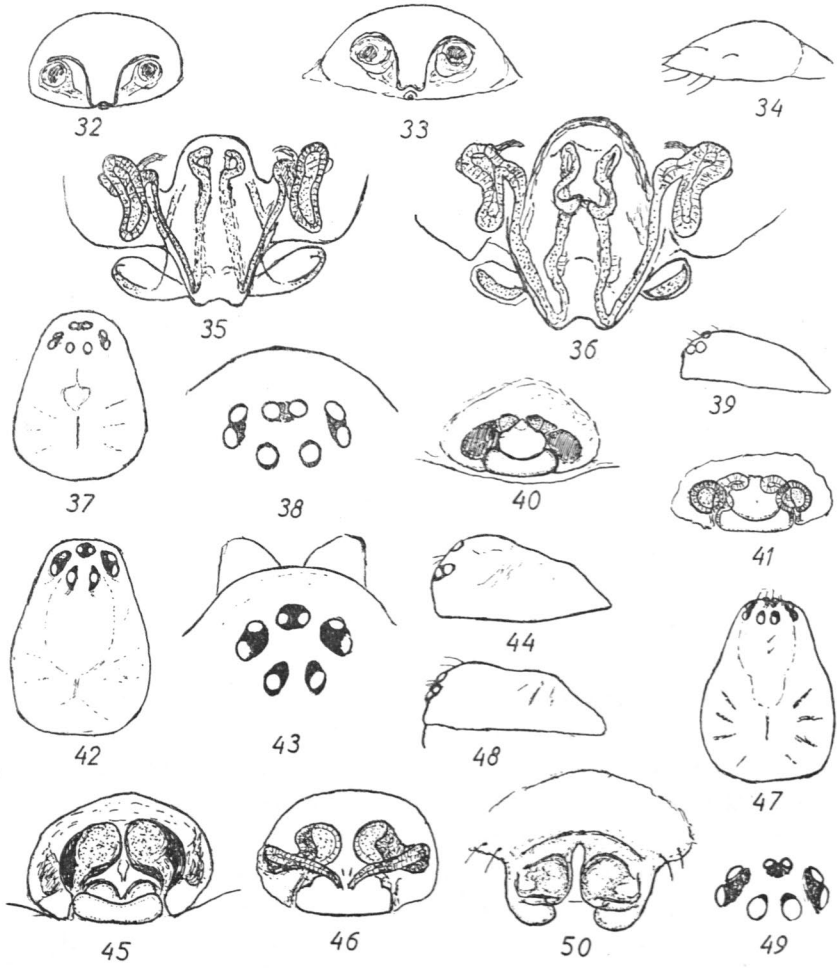


Fig. 32—36. *Meioneta decora* Cambr. Fig. 32 epigynum (Newfoundland), fig. 33 epigynum (Finnish Lapland), fig. 34 female palpus (Newfoundland), Fig. 35 internal epigynal organs, Newfoundland specimen, fig. 36 the same, Finnish specimen. Fig. 37—41 *Tapinocyba exigua* n.sp. Fig. 37 carapace, dorsal view, fig. 38 ocular area, fig. 39 carapace, lateral view, fig. 40 epigynum, fig. 41 its internal parts. Fig. 42—46 *Tapinocyba lindrothi* n.sp. Fig. 42 carapace, dorsal aspect, fig. 43 ocular area, fig. 44 carapace, lateral view, fig. 45 epigynum, fig. 46 its internal parts. Fig. 47—50 *Collinsia palmeni* n.sp. Fig. 47 carapace, dorsal view, fig. 48 the same, lateral view, fig. 49 ocular area, fig. 50 epigynum.

relative size and position of the eyes are shown in figs. 42—44. Sternum and labium greyish yellow. Endites orange, chelicerae yellow. Fang groove in front with 5 small teeth, hind margin with 4, also very small, teeth. Palpi yellow, legs also yellow. Spines and trichobothria of the legs situated as usual in the genus *Tapinocyba* sensu MILLIDGE (1951). Abdomen grey, epigynum yellow. The orange-brown receptacula show through. This species is readily distinguished by the epigynal structures (fig. 45, 46) from other species of *Tapinocyba* known to me.

Measurements: Carapace, length 0,70 mm. Tibia-patella I 0,55 mm., II 0,50 mm., III 0,40 mm., IV 0,55 mm.

Holotype: NEWFOUNDLAND: St. George—Port au Port: South Branch 3.7.1949, ♀ leg. E. Palmén.

Tapinocyba exigua n.sp. (figs. 37—41)

♀ — Total length 1,4 mm. Carapace red-brown with suffuse dark pigment. Height of clypeus 0,13 mm. The relative size and position of the eyes is seen in figs. 37—39). Sternum dusky orange-brown, polished. Labium of the same colour as the sternum but paler at the margin. Endites dusky yellow Chelicerae dusky yellow. Fang groove in front with 5 denticles, on the hind margin also with 5 very small teeth. Palpi and legs pale orange-yellow. Chaetotaxy of legs as usual in the genus. Abdomen dark grey, on the dorsum, with two pairs of small red-brown impressed spots. The middle lobes of the epigynum (see fig. 40) yellow. The lateral parts of the epigynum dusky yellow. The red-brown receptacula show through.

Measurements: Carapace, length 0,65 mm., width 0,55 mm. Tibia-patella I 0,50 mm., II 0,65 mm.

Type locality: NEWFOUNDLAND: Grand Falls: Millertown Junction, 1 female taken 22.8.1949 by E. Palmén.

I have placed this species in the genus *Tapinocyba*, but as long as the male is unknown it is somewhat uncertain if the species really belongs here. The impressed red-brown dots on the abdomen indicate a relation to the genus *Troxochrus* (sensu MILLIDGE 1951), but on the other hand the sternum is not rugose as in the species of the latter genus (see MILLIDGE's key, point 37 op.c. p. 553).

Dietrichia hesperia Crosby & Bishop (?). (figs. 51—57)

Among the spiders collected in Newfoundland before 1949 there is a *Dietrichia* species from St. George—Port au Port: Stephenville, 1 ♀ taken 29. 10. 1947 by Robert Traub. Dr. GERTSCH kindly sent me this specimen and also paratypes of *Dietrichia hesperia* Crosby & Bishop from California, the only species previously described in this genus.

Dr. GERTSCH suggested in a letter that the specimen from Newfoundland might belong to a new species. I have compared the two spiders thoroughly but found very few differences and those small (see figs. 51, 52, 53, 54, 56, 57). The main difference is in the tibia of the male palpus. In the specimen from

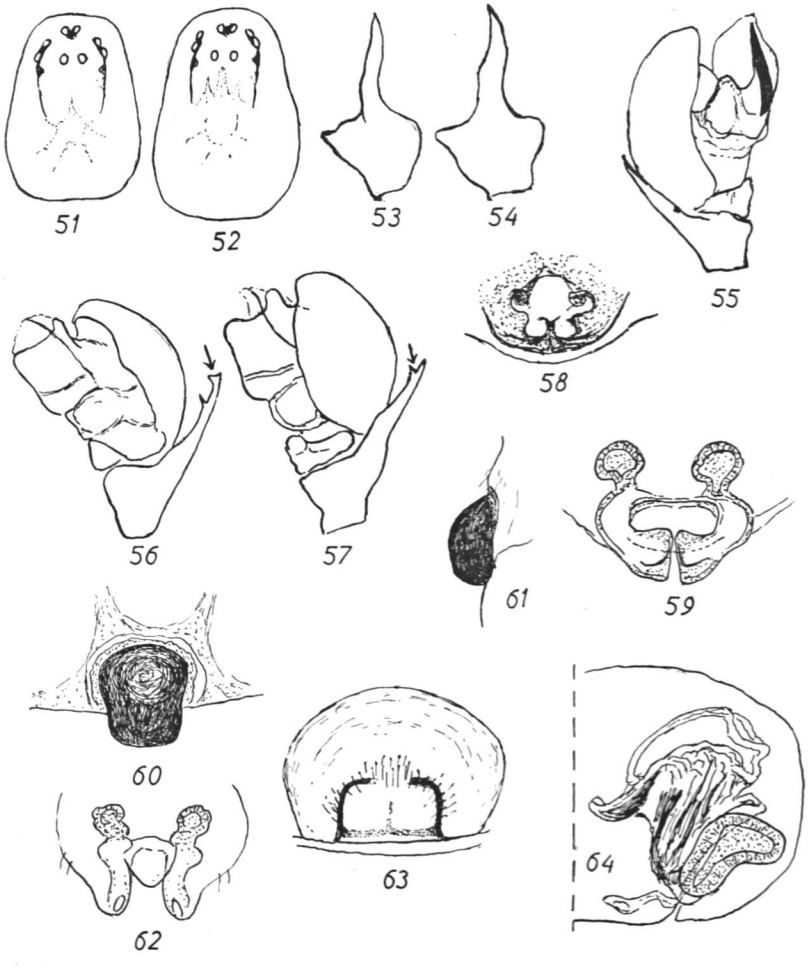


Fig. 51—57 *Dietrichia hesperia* Crosby & Bishop. Fig. 51 Male carapace of Newfoundland specimen, fig. 52 the same of Californian specimen, fig. 53 tibia of male palpus (Newfoundland), dorsal aspect, fig. 54 the same, California, fig. 55 male palpus, lateral view, Newfoundland specimen, fig. 56 male palpus, ectal view, Newfoundland, fig. 57 the same, California. Fig. 58—59 *Tapinocyba scopulifera* Emert., epigynum, fig. 58 ventral aspect, fig. 59 the internal parts. Fig. 60—62 *Eperigone trilobata* Emert. Fig. 60—61 epigynum covered by a chitinous mass, ventral and lateral view, fig. 62 the mass removed and epigynum, made transparent. Fig. 63—64 *Spirembolus oreinoides* Chamb. (Newfoundland). Fig. 63 epigynum ventro-caudal aspect, fig. 64 right internal parts of the epigynum.

Newfoundland the apophysis has two teeth near the apex, in the Californian specimen only one, which is subapical. As there is only a single specimen known from Newfoundland and, moreover only a few specimens known from California, it is not easy to judge if the differences found are constant. If so I should prefer to regard the two spiders as belonging to different subspecies, but a subspecies cannot be named and described on a single specimen. I have therefore listed the spider from Stephenville as *Dietrichia hesperia* Crosby & Bishop (?).

The total length of the Newfoundland specimen is 1,6 mm. Length of carapace 0,72 mm., width 0,53 mm. frontal width 0,39 mm. First leg: Femur 0,46 mm., patella 0,13 mm., tibia 0,32 mm., metatarsus 0,26 and tarsus 0,26 mm.

Thyreosthenius parasiticus Westr.

This species has been described under several names: *Erigone parasitica* Westr. 1851, *Walckenaera becki* Cambr. 1870, *Erigone synophrys* Thor. 1871, *Monocephalus turgidus* (Bl.) Hull 1932 (? non *Walckenaera turgida* Bl. 1841, discussed by HOLM 1945) and *Hormathion limnatum* Crosby & Bishop 1933. The latter synonymy was claimed by me in a recent paper (HACKMAN 1952) and based on a comparison of females of the species from Finland and Newfoundland. Later on Dr. GERTSCH kindly lent me a male specimen of *H. limnatum* and the synonymy was entirely confirmed. The genus name *Thyreosthenius* Simon 1926 has priority before *Hormathion* Crosby & Bishop 1933. The latter is monotypic and becomes a synonym.

The **Erigone** species (figs. 78—84)

In their papers of 1928 CROSBY and BISHOP give excellent figures of the male palpi of the American species of the genus *Erigone*, but unfortunately no figures of the internal parts of the epigyna.

The determination of the females in the Newfoundland material has therefore not been easy. Dr. GERTSCH has sent me material of several American species for comparison. This has enabled me to identify most of the species with certainty. I have figured (figs. 78—84) the internal epigynum organs of all species in the Newfoundland material. One species of which I have not had material for comparison, I have with some hesitation identified with *whymperi* Cambr., previously reported from Greenland, Ellesmere Land and Akpatok Island. The inner epigynal organs are rather like those of *E. psychrophila* Thor. (figured by HOLM 1937, fig. 4 b) but the external structures agree much better with *whymperi* than with *psycrophila* (see BRAENDEGAARD 1940, figs. 22, 23).

In *Erigone ephala* Crosby & Bishop I have found some variation concerning the receptacula of the female (the extreme types are shown in figs. 79, 80).

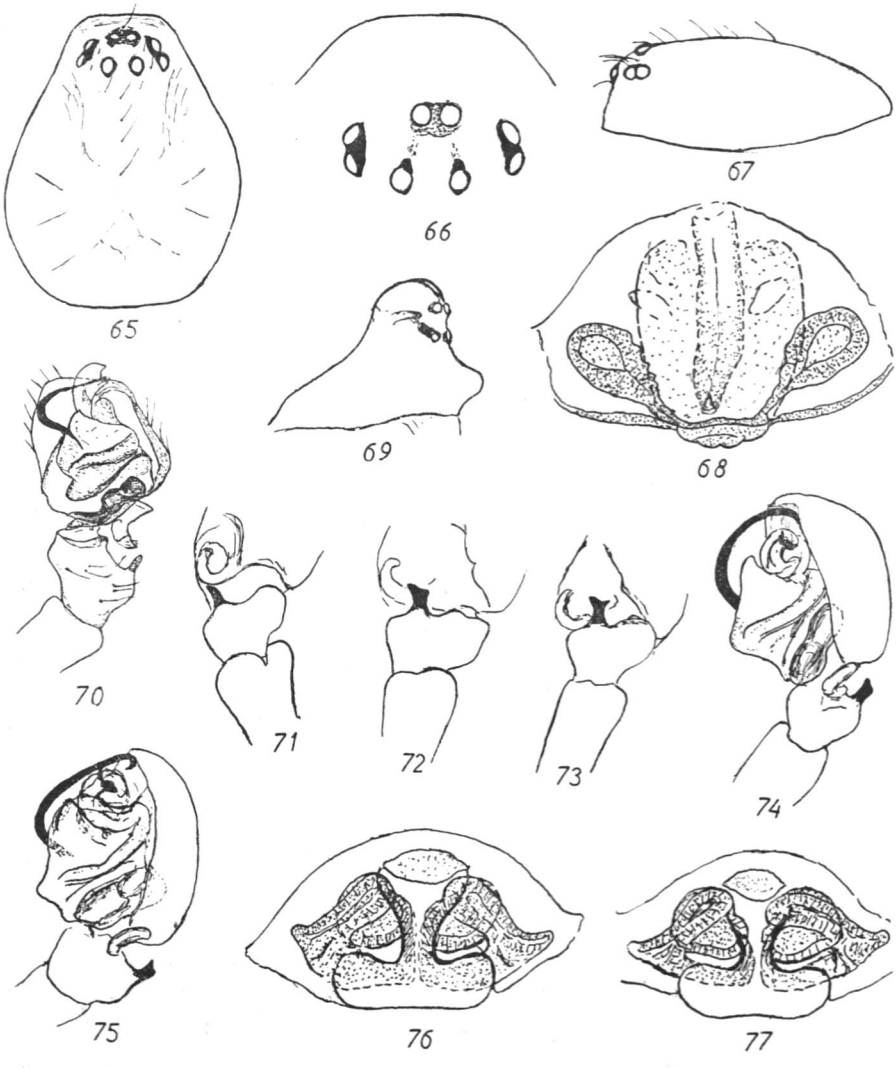


Fig. 65—67 *Spirembolus oreinoides* Chamb. & Ivie (Newfoundland). Fig. 65 carapace, dorsal aspect, fig. 66 ocular area, dorsal aspect, fig. 67 carapace, lateral aspect. Fig. 68 *Hybocoptus denticulatus* Emert., epigynum, made transparent, dorsal view. Fig. 69—71 *Dismodicus alticeps* Chamb. & Ivie. Fig. 69 cephalothorax, lateral aspect, fig. 70 male palpus, ventral view, fig. 71 male palpus, tibial division, dorsal aspect. Fig. 72 *Dismodicus bifrons decemoculatus* Emert. tibial division of male palpus, dorsal aspect. Fig. 73 the same part in *D. b. bifrons* Bl. Fig. 74 *D. b. decemoculatus*, ventro-ectal aspect of male palpus. Fig. 75 the same of *D. b. bifrons*. Fig. 76 *D. b. decemoculatus*, internal parts of epigynum. Fig. 77 the same in *D. b. bifrons*.

Eperigone trilobata Emerton (figs. 60—62).

In a number of females of this species the epigynum was covered by a

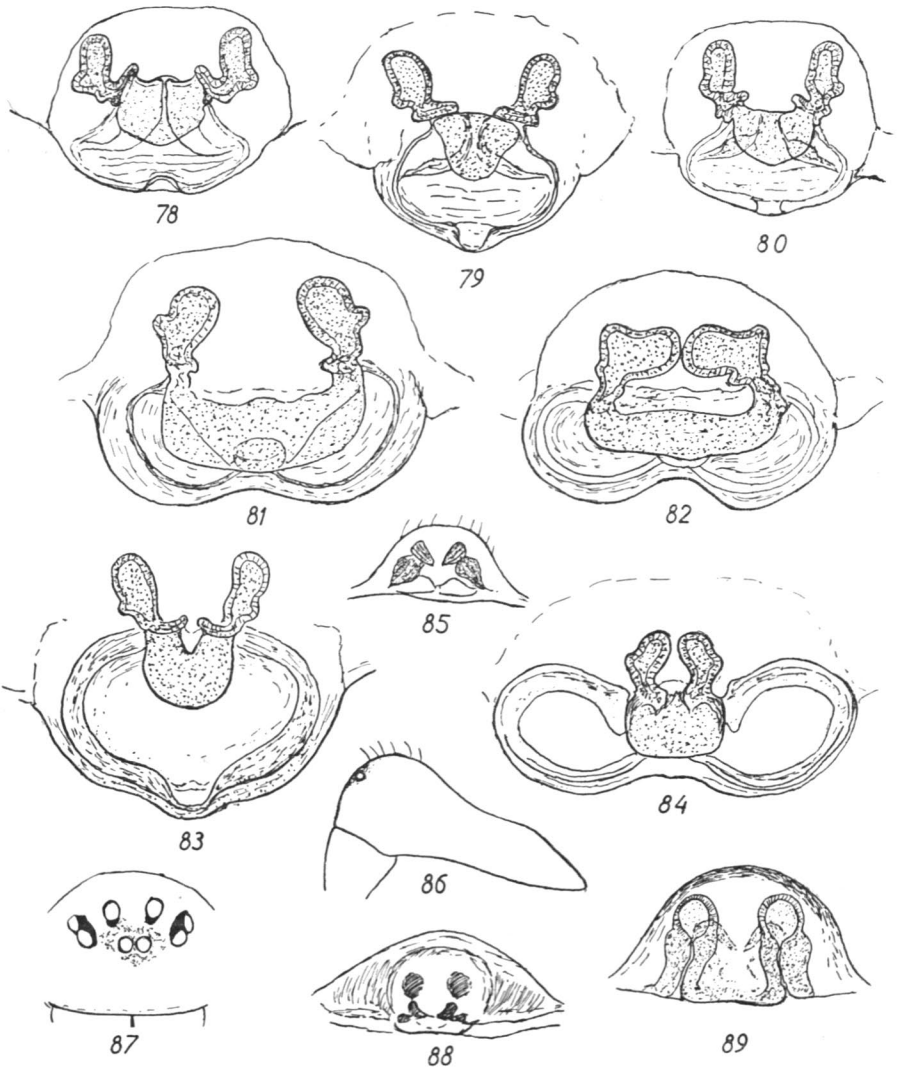


Fig. 78. *Erigone whymperi* Cambr. (?), epigynum, internal parts. Fig. 79—80 *Erigone ephala* Crosby & Bishop. Fig. 79 epigynum, internal parts, specimen from Port aux Basques, fig. 80 the same of specimen from Eddies Cove West. Fig. 81 *Erigone dentigera* Cambr., epigynum, internal parts. Fig. 82 *Erigone blaesa* Crosby & Bishop, the same parts. Fig. 83 *Erigone aletris* Crosby & Bishop., the same parts. Fig. 84 *Erigone atra* Bl., the same parts. Fig. 85—89 *Hilaira mentasta* Chamb. & Ivie. Fig. 85 epigynum, caudal view, fig. 86 male carapace, lateral view, fig. 87 ocular area of the male, frontal view, fig. 88 epigynum ventral view, fig. 89 epigynum, internal parts.

more or less regular brown rugose chitinous mass. In some of these specimens the mass formed a regular round knob (figs. 60, 61), which gave the spider

a *Linyphiidae*-like appearence. It agrees somewhat with the description and illustration of »*Bathyphantes*» *tristis* Banks (1892) from the upper Cayuga Lake basin. The case, however, needs further investigation. At all events it is obvious that *tristis* Banks does not belong to the genus *Bathyphantes*.

The genus **Collinsia** Cambr..

HOLM (1950) has shown that the genus *Coryphaeolana* Strand 1914 is a synonym of *Collinsia* Cambridge 1913, which has priority. HOLM (op.c.) also points out that the nearctic genus *Catabrithorax* Chamberlin 1920 could probably be regarded as a synonym to *Collinsia*. There is no wide gap separating the two genera. The extreme development of the posterior tooth of the embolic division of the male palpus, characteristic for *Catabrithorax*, begins already in *Collinsia distincta* Sim. and *C. holmgreni* Thor. The genus *Collinsia* contains only a few species and I have also therefore found it suitable to unite the two genera. The name *Collinsia* has priority. *Catabrithorax* could be retained as a subgenus (sensu CHAMBERLIN 1948). Other nearctic subgenera of *Collinsia* are then *Catosus* Chambr. 1948, and *Stenosus* Chamb. 1948.

Collinsia palmeni n.sp. (figs 47—50).

♀ — Total length 2,9 mm. Carapace brownish yellow. Highest point of carapace behind the ocular area (see fig. 48). Position of eyes is shown in fig. 49. Clypeus, chelicerae, labium and endites yellow-brown, sternum dusky yellow. Legs and palpi yellow-brown, their tibia, metatarsus and tarsus darker than the femur. Patella I—IV with a dorsal, subapical bristle. Tibia I—III with two dorsal bristles, tibia IV with only one. Abdomen grey, without any distinct markings. The epigynum of the holotype is shown in fig. 50.

Measurements: Carapace, length 1,45 mm., width 1,10 mm. Legs, I femur 1,10 mm., I patella–tibia 1,60 mm., IV femur 1,35 mm., IV patella–tibia 1,50 mm.

In size and shape of carapace, sternum and in chaetotaxy of the legs this species resembles *Collinsia* (*Catabrithorax*) *pertinens* Cambr., but the epigynum is quite different. I have not seen any figures or specimens of *Collinsia* (*Catabrithorax*) *probata* Cambr. described from Oregon, but the short description given by CROSBY & BISHOP (1928 b) does not fit very well with *C. palmeni*.

Type locality: NEWFOUNDLAND: St. Georges — Port au Port: South Branch, a single female 2.7.1949 leg. E. Palmén.

»**Erigone**» **mentasta** Chamb. & Ivie (figs. 85—92)

This species, described without certain generic designation by CHAMBERLIN & IVIE 1947 from Alaska, obviously belongs to the genus *Hilaira*

Sim. In many respects it is close to *Hilaira excisa* Cambr., the generotype. In the Newfoundland collection there is a female specimen which agrees rather well with the description of *mentasta* Chamb. & Ivie. It differs somewhat in size:

	♀ type, Alaska	♀, Newfoundland
Carapace, length	1,08 mm.	1,45 mm.
width	0,88 mm.	1,10 mm.
Tibia – patella I	1,20 mm.	1,35 mm.
IV	1,22 mm.	1,45 mm.

The receptacula of the epigynum are more close together in *mentasta* from Alaska (judging from fig. 37 in CHAMBERLIN and IVIE's paper of 1947) than in the specimen from Newfoundland. As the description of *mentasta* is based on one single specimen and as there is only one female specimen in the material from Newfoundland, I have not wanted to describe a new species on this difference, which might be within the range of geographic variability of a single species. I have therefore recorded the species as *Hilaira mentasta* in this paper.

Apart from the female specimen mentioned above there is a *Hilaira* male in the material which might belong to the same species. The male of *Hilaira mentasta* was not known before, but the male from Newfoundland comes close to *H. excisa* Cambr. from Europe and I have therefore associated it with *mentasta*. The male is not from the same Newfoundland locality as the female but they agree in size and pattern. The male was collected just moulted and is therefore paler in colour. The description:

♂ — Total length 2,5 mm. (as the female). Carapace pale yellow (after moulting) with dusky side margin, cephalic part (see fig. 86) more elevated than in the female. Size and position of eyes is demonstrated in fig. 87. Sternum and labium dusky over yellow. Endites and chelicerae yellow, orange-tinged. Teeth of fang groove as in the female. Legs yellow and normal. Tibia IV with two setae above (as also in the female). Trichobothrium of metatarsus I placed 0,45 (see MILLIDGE 1951).

The structure of the male palpus is shown in figs. 90—92. Its tibia has a long curved apophysis as in *H. excisa*. The paracymbium also shows similiarity with that of *excisa* but differs in some details. In *mentasta* its distal part is dorsally drawn out to a narrow point (fig. 90), in *excisa* more clavate.

Measurements of the male: Carapace, length 1,45 mm., width 1,10 mm. Tibia–patella I 1,45 mm. IV 1,60 mm.

Locality of the male allotype: NEWFOUNDLAND: H u m b e r, Gaff Topsail 19.8.1949, leg. E. Palmén. The female specimen is from S t. B a r b e, Lomond. I have figured its epigynum and also the receptacular organs in figs. 85, 88, 89.

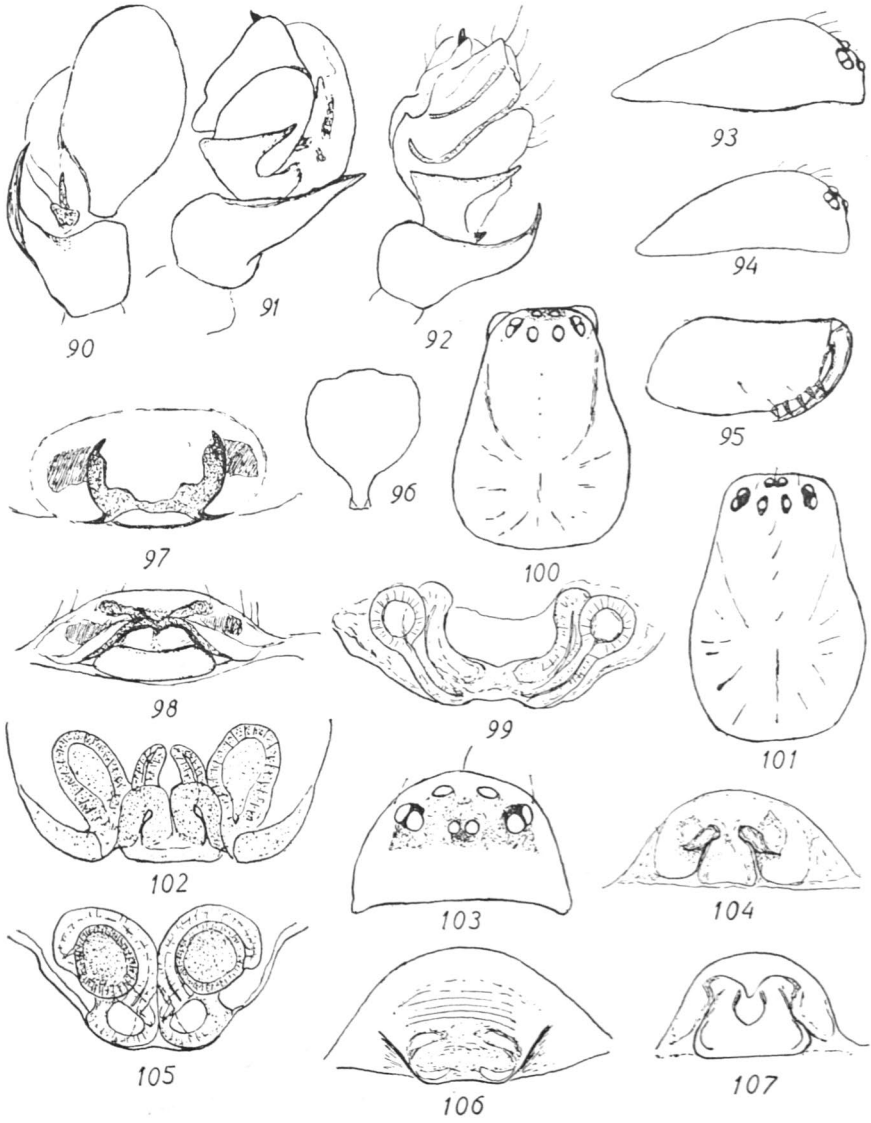


Fig. 90—92 *Hilaira mentasta* Chamb. Ivie, male palpus. Fig. 90 dorsal, fig. 91 ectal, fig. 92 ventro-ectal view. Fig. 93 *Hilaira aquilonia* n.sp., female carapace, lateral view. Fig. 94—96 *Hilaira dubia* n.sp. Fig. 94 female carapace, lateral view, fig. 95 female chelicera, fig. 96 female sternum. Fig. 97—99 *Hilaira aquilonia*, epigynum. Fig. 97 ventral view, fig. 98 caudal view, fig. 99 internal parts. Fig. 100 *Hilaira dubia*, carapace of the female. Fig. 101 *Hilaira aquilonia*, female carapace. Fig. 102—104 *Hilaira dubia*. Fig. 102 internal parts of the epigynum, fig. 103 ocular area of female, frontal view, fig. 104 epigynum, caudo-ventral view. Fig. 105—107 *Hilaira algida* n.sp. epigynum. Fig. 105 internal parts, fig. 106 ventral view, fig. 107 caudal view.

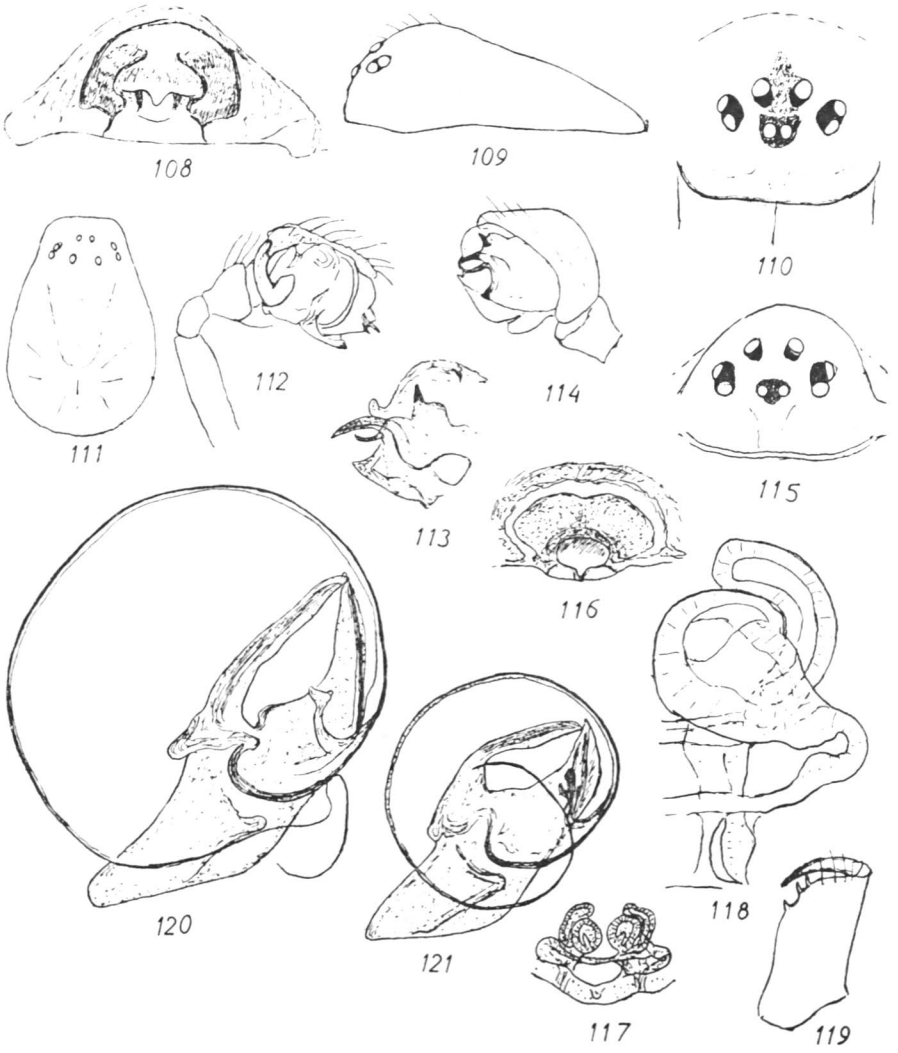


Fig. 108—110 *Hilaira algida* n.sp. Fig. 108 epigynum, ventro-caudal view, fig. 109 female carapace, lateral view, fig. 110 ocular area, frontal view. Fig. 111—119 *Porrhomma gertschi* n.sp. Fig. 111 male carapace, fig. 112 male palpus, ectal view, fig. 113 embolic division, fig. 114 male palpus, ventro-mesal view, fig. 115 ocular area of the male, frontal view, fig. 116 epigynum, ventral aspect, fig. 117 internal parts of epigynum, fig. 118 right receptacular organs, fig. 119 chelelicera of the male. Fig. 120 *Pusillia mandibulata* Emert., embolic division, Fig. 121 *Pusillia pusilla* Sund. (Finland), embolic division.

Hilaira algida n.sp. (figs. 105—110)

♀ — Total length about 3 mm. Carapace light orange-brown, faintly marked with dusky pigment and of the usual *Hilaira* type. (Fig. 109). Ocular

size and position normal (fig. 110). Sternum and labium dusky over orange-brown. Chelicerae and endites orange-brown. Teeth of the fang groove of usual type and number (as for example, in *H. garrina* Chamb.). Legs and palpi yellow. Hind tibia with 1 seta above. Abdomen grey, spinnerets greyish yellow. Epigynum ventrally dusky yellow-grey, elevated. Its structure is demonstrated in figs. 105—107.

Measurements:

	Holotype	2 Paratypes
Carapace, length	1,50 mm.	1,55 mm.—1,60 mm.
width	1,05 mm.	1,20 mm.—1,15 mm.
Tibia – patella I	1,60 mm.	1,75 mm.—1,65 mm.
» » IV	1,75 mm.	1,80 mm.—1,85 mm.

This species is obviously close to *Hilaira garrina* Chamb., described from Pike's Peak in Colorado. *H. algida* differs from the latter species in its more elevated epigynum. The median lobe of the epigynum in *algida* is wider than in *garrina* and has a characteristic median impression (in fig. with horseshoe-shaped outlines). The receptacula are much closer together than in *garrina* (judging from the figure given by CHAMBERLIN, 1948, Pl. VI fig. 64). *H. algida* seems also to be related to *H. laeviceps* L. Koch judging from the figures given by JACKSON (1933, Pl. II).

Type locality: NEWFOUNDLAND, Burgeo—La Poile: Grand Bruit, 13.6.1949 1 o, the holotype and one female paratype in the same sample. An other female paratype from St. Barbe: Lomond.

Hilaira dubia n.sp. (figs. 94—96, 100, 102—104)

♀ Total length 3—3,5 mm. Carapace yellow-brown with diffuse dark pigment in the ocular area and at the lateral margins. Highest point behind the ocular area (see fig. 94). The relative size and position of eyes is seen in fig. 103. Sternum dusky yellow, darker at the margins. Endites and labium also dusky yellow. Chelicerae orange. Front margin of the fang groove with 5 strong teeth (fig. 95), hind margin with 5 very small teeth, the basal two somewhat larger than the others. Legs yellow, metatarsi and tarsi darker than the tibiae and femora. Chaetotaxy of the legs as in other *Hilaira* species. Abdomen dark grey without distinct markings. Epigynum yellow, median lobe orange in the middle part, darkly pigmented on the sides. Receptacula showing through as round dark spots (fig. 104). The inner parts of the epigynum are shown in fig. 102.

Measurements:

	Holotype, ♀	Paratypes (♀♀)
Carapace, length	1,40 mm.	1,35—1,55 mm.
width	1,10 mm.	1,05—1,20 mm.
Tibia – patella I	1,65 mm.	1,35—1,70 mm.
Tibia – patella IV	1,75 mm.	1,60—1,75 mm.

In the structure of the epigynum this species differs rather much from other *Hilaira* species known to me. As the male is unknown, it is not yet possible to insert the species in any of the groups of the genus.

Type locality: NEWFOUNDLAND, St. Barbe: Stanford River, female holotype taken 11.8.1949 by E. Palmén. Paratypes from St. George —Port au Port: South Branch, Burgeo—La Poile: Grandy Brook, Humber: Kittys Brook, St. Barbe: St. Barbe and Grand Falls: Victoria Lake.

Hilaira aquilonia n.sp. (Figs. 93, 97—99, 101)

♀ — Total length 3,1—3,5 mm. Carapace orange-brown. Cephalic part elevated as usual in the genus (see fig. 93). Size and position of eyes normal (Fig. 101). Sternum dusky yellow, with dark pigment at the margins. Labium dusky brown, but pale yellow at the front margin. Endites and chelicerae dark orange-brown. Front margin of the fang groove with 5 strong teeth, hind margin with 4—5 small denticles. Palpi and legs orange. Chaetotaxy of legs as usual in *Hilaria*. Abdomen dark grey, spinnerets dusky yellow. Epigynum yellow, the median part margined with dark red-brown. This species belongs to the *glacialis* group and as well as the other *Hilaira* species described here from female specimens, it is recognized mainly by the structure of the epigynum (figs. 97—99).

Measurements:

	Holotype ♀	Paratypes ♀
Carapace, length	1,65 mm.	1,70 mm.
width	1,10 mm.	1,25 mm.
Tibia – patella I	1,50 mm.	1,60 mm.
IV	1,70 mm.	1,80 mm.

Type locality: NEWFOUNDLAND, St. Barbe: Stanford River, 11.8.1949, female holotype and paratype from the same sample taken by E. Palmén.

Spirembolus oreinoides Chamb. (?). (figs. 63—67)

In the Newfoundland collection there is a female specimen, which agrees rather well with the description of *Spirembolus oreinoides* Chamb. (1948) from Mount Palomar in California. The differences found seem to be of less importance: The carapace in the specimen from Newfoundland is dark reddish brown, in the single specimen of *oreinoides* from California »light brown, faintly marked with dusky» (CHAMBERLIN 1948, p. 546). The front teeth of the fang groove are in the former specimen 6, in the latter 5. The structure of the epigynum seems to be almost the same in both specimens. Unfortunately Chamberlin gives no figure of the receptacular organs (very characteristic in the Newfoundland specimen, see fig. 64). The measurements of *oreinoides*

given by CHAMBERLIN do not much differ from corresponding measurements of the specimen from Newfoundland:

	♀, California	♀, Newfoundland
Carapace, length	1,05 mm.	1,06 mm.
width	0,78 mm.	0,88 mm.
Tibia – patella I	1,00 mm.	0,95 mm.
IV	1,12 mm.	1,06 mm.

It seems to me that here we have to do with a similar case to *Dietrichia hesperia*. The occurrence of the same species in the mountains of California and in Newfoundland presents no impossibility. The differences found might be of subspecific value but as long as only one specimen is known from each of the areas, this question must be left open.

The genus **Mythoplastoides** Crosby & Bishop

As pointed out by HOLM (1950) *Mythoplastoides sombrus* Chamb. & Ivie (from Alaska) is very probably identical with *Entelecara media* Kulczynski (Europe). The two genera have so much in common that I have found it convenient to unite them into one. *Entelecara* Sim. 1884 has priority before *Mythoplastoides* Crosby & Bishop 1933. A possible subgeneric division of *Entelecara* sens. lat. affords further investigations.

The genus **Chocorua** Crosby & Bishop

The type of this genus, *cuneata* Emerton is extremely close to *Diplocephalus picinus* Bl. and the two species must be placed in the same genus. In the European spider literature of the last 30 years we find *picinus* Bl. inserted in several different genera (*Savignia, Plaesiocraerus, Diplocephalus* etc.). I have followed BRISTOWE (1939) and MILLIDGE & LOCKET (1952) and used the generic name *Diplocephalus* Bertk. 1882 for *picinus* Bl. and therefore also the name *Diplocephalus cuneatus* Emerton. The name *Chocorua* is dropped as a synonym.

The **Dismodicus** species. (figs. 69—77)

Of the genus *Dismodicus* four species have been described from northern nearctic areas: *D. decemoculatus* Emert. (1882) from New England, *D. variegatus* Jacks. (1937) from Greenland, *D. alticeps* and *D. modicus* by Chamb. & Ivie (1947) from Alaska. *D. alticeps* Chamb. & Ivie is a clearly distinct species described from a single male specimen. This species also occurs in Newfoundland, being represented by one male in the material I have had for study. This specimen (see figs. 69—71) agrees very well with the description of *alticeps*, but it might be mentioned that the cephalic part of the carapace is not quite as highly elevated as in fig. 29 in CHAMBERLIN and IVIE's paper. The structure of the male palpus agrees exactly with *alticeps*.

The determination of the other *Dismodicus* specimens in the Newfoundland material has caused me much trouble. *D. variegatus* and *modicus* are only known as females and described on only two specimens each. There seems to be no sure structural character separating them from *decemoculatus*. In addition to this the European species *D. bifrons* Bl. (1841) belongs to the same complex. JACKSON (1937) points out that *variegatus* might even be a variety of *bifrons*. He states that the two *variegatus* specimens are rather larger than the average of *bifrons* and gives the cephalothorax length for *variegatus* as 0,8 mm. On the other hand the corresponding measurement for females of *bifrons* in my Finnish collection is 0,9 mm.! The abdomen of *variegatus* is said to be longer and narrower than in *bifrons*, but as no exact measurements of the width are given in the description, this character does not assist much. The epigynum is similar to that of *bifrons*. The figure given by CHAMBERLIN & IVIE for the epigynum of *D. modicus* is also similar to *bifrons*. The epigynum of *D. decemoculatus* shows a remarkable range of variability judging from the figures in EMERTONS paper 1911 and that in CROSBY & BISHOPS paper 1933. Here the separating epigynal characters between *variegatus* and *decemoculatus* mentioned by JACKSON (op. c.) break down.

The males of *bifrons* and *decemoculatus* differ apart from colour characteres only in a detail in the palpus. In *decemoculatus* the dorsolateral process of palpal tibia is wider and thinner than in *bifrons* (see figs. 72—75).

There remain the female colour characters for a key of all four species of the complex:

	Carapace	Chelicerae in front	Abdomen
D. bifrons	dark brown	no pattern	dark grey
D. variegatus	light brown, dark trident-shaped, dorsal pattern.	variegated	paler grey
D. modicus	light orange, trident pattern	no pattern	dark grey to black
D. decemoculatus .	bright orange--yellow, no trident pattern	no pattern	dark grey to black

The female specimens of this complex from Newfoundland are rather variable in colour. I have split them into 5 types, which are however, not very distinctly separated from each other:

Type I: Carapace reddish brown with dark suffusion, trident pattern faint. Chelicerae not variegated in front. Abdomen dark grey.

Type II: Carapace dusky over reddish or yellowish brown, trident pattern more distinct, chelicerae faintly variegated, abdomen dark grey.

Type III: Carapace dusky over reddish or yellowish brown, trident pattern absent or very faint, chelicerae not variegated. Abdomen grey to pale grey.

Type IV: Carapace orange-brown, trident pattern faint, represented only by a short dark dorsal streak. Chelicerae not variegated, abdomen pale grey to whitish.

Type V: Carapace orange, trident pattern more distinct, chelicerae not variegated, Abdomen dark grey.

	Colour types				
	I	II	III	IV	V
Number of specimens ...	4	6	3	8	1

Type I approaches *bifrons* of Europe, type II comes close to *variegatus* from Greenland, type III is more or less intermediate, type IV approaches the typical *decemoculatus* and type V cannot be separated from *modicus* of Alaska.

The epigyna show some minor variation in the shape of the cup-like middle part but the internal parts are similar in all the specimens from Newfoundland. I have compared the internal organs with those of *bifrons* from Finland and found no distinct difference (see figs. 76, 77).

Among the males in the material there is one agreeing exactly with *decemoculatus* both in structure of the male palpus and in colour and pattern. The other males (4) are about as dark in colour as *bifrons* but the palpi agree better with *decemoculatus*.

My conclusion of all this is that we have to do with a single polytypic species including *decemoculatus*, *modicus*, *variegatus* and *bifrons*. The name *bifrons* Bl. has priority as a specific name. The name *decemoculatus* could be retained as a subspecific name for the nearctic populations of the species.

Gongylidium tuberosum Emert. (fig. 68)

Holm (1945) has shown that the male of this species is identical with *Oreonetides vaginatus* Thor. He points out that the female of *tuberosum* belongs to some quite other species not known to him. Dr. Gertsch has informed me that the *tuberosum* female is identic with *Hybocoptus denticulatus* Emerton described in 1915, in the same year as *tuberosum*. In the type material of *Gongylidium tuberosum* from Battle Harbour in Labrador no holotype has been selected by Emerton. In order to avoid confusion of nomenclature I design the male type as holotype and then the name *tuberosum* Emert. can be dropped definitely as a synonym to *Oreonetides vaginatus*. There is a female of *Hybocoptus denticulatus* in the material from Newfoundland and I have figured here in this paper the internal parts of the epigynum (fig. 68).

Ceratinella brunnea Emert.

This species belongs to a group of very closely related nearctic spiders. The others are *C. diversa* (from Minnesota), *C. hemethea* (Georgia, Florida),

C. holocera (Florida), *kenaba* (Florida), all described by CHAMBERLIN 1948, and differing very little from each other, and hardly separable in the female sex. *C. brunnea* is a northern species and I have placed all the Newfoundland specimens under this name. The males are clearly *brunnea*.

Porrhomma gertschi n.sp. (figs. 111—119)

♂ — Total length nearly 2 mm. Carapace dark yellow-brown with some suffuse grey markings behind the cephalic area; margin dark. Chelicerae of similar colour as the carapace. Endites yellow-brown. Sternum dusky yellow-grey. Legs orange-yellow. Abdomen dark grey. Carapace of about average height. Clypeus nearly vertical. The position and relative size of the eyes is seen in figs. 111, 115. Chelicerae (fig. 119) with 3 teeth on the front margin of the fang groove. Chaetotaxy of legs as usual in the genus. The structure of the male palpus is demonstrated in figs. 112—114.

♀ — Total length nearly 2 mm. Colouring almost as in the male. In some specimens the sternum is much darker. Structure of carapace and size and position of the eyes similar to the male. The structure of the epigynum is shown in figs. 116—118. The receptacula are not showing through.

Measurements:

	♂♂	♀♀
Carapace, length	0,78—0,82 mm.	0,76—0,82 mm.
width	0,60—0,63 mm.	0,56—0,58 mm.
Tiba – patella I	0,65—0,69 mm.	0,71—0,76 mm.
IV	0,72—0,76 mm.	0,76—0,80 mm.

Porrhomma gertschi is closely related to *P. ocella* Chamb. & Ivie (described 1947 from Alaska). It differs from *ocella* in the smaller size, darker colouring of the carapace, sternum and abdomen, and in the structure of the male palpus and the epigynum. The apex of the cymbium in *P. gertschi* is not seen in ectal view of the male palpus, but judging from the figure (CHAMBERLIN & IVIE 1947, p. 31 fig. 1) the cymbium of *P. ocella* is more elongated and easily seen in ectal view of palpus. In the embolic division there are minor but distinct differences between the two species.

Type locality: NEWFOUNDLAND, H u m b e r : Deer Lake, the male holotype, the female allotype and 2 male and 4 female paratypes in the same sample collected by C. H. LINDROTH.

The genus **Araneus** Clerck.

This large genus has recently been split by some authors into several genera. I have preferred here to retain the generic name *Araneus* in a wider sense.

Theridiosoma radiosum Emert.

This species has long been considered identical with *Theridiosoma gemmosum* L. Koch of Europe. ARCHER (1940 p. 17) writes: »Some authorities believe

that this species (*T. radiosum*) is the same as the European *T. gemmosum* Keyserling*, but is now known to be distinct.» KASTON (1948) on the other hand uses the name *gemmosum* without discussing the matter. There are only females of *radiosum* in the material from Newfoundland and I have not hitherto had access to material of *gemmosum* from Europe. It seems to me that the case needs further investigation.

Pirata insularis Emert.

I have not been able to find any constant difference between this species and the European *P. piccolo* Dahl. It must, however be mentioned that I have had only a few specimens of *piccolo* (from Sweden) for comparison with the material of *P. insularis* from Newfoundland. The name *insularis* Emerton 1885 has priority.

The generic names **Alopecosa** and **Pardosa.**

I have followed BONNET (1951) and used the names *Alopecosa* and *Pardosa* (for *Tarentula* and *Lycosa* of many authors).

Trochosa pratensis Emert.

Following GERTSCH (1934) I have considered *pratensis* Emerton as an eastern North American subspecies of *Trochosa terricola* Thor. (nominate form in Europe and Siberia). *T. terricola* shows an interesting geographical variability in regard to the number of retromarginal teeth on the chelicerae. GERTSCH (1934) has found that the specimens from western nearctic areas have 2 teeth on each side as a rule and those from the eastern areas 3. In the northern part of the Missisippi basin the two types are about equally represented. Except that there occur specimens with two teeth on one retromargin (right or left) and three on the other. The nominate form, at least in Fennoscandia, has as a rule two teeth. In *T. t. pratensis* there is sometimes a fourth tooth on one or both sides. I have examined the Newfoundland material (287 specimens) in regard of these teeth and found following variation:

Number of retromarginal teeth		Number of specimens
right	left	
3	3	277 (96,5 %)
4	3	1
3	4	3
3	2	3
2	3	2
2	2	1

The 10 aberrant specimens are from different parts of Newfoundland.

* Should be L. Koch, lapsus calami.

Pardosa saltuaria L. Koch.

TAMBS-LYCHE (1940) has demonstrated that *Pardosa saltuaria* L. Koch from the Alps and *P. hyperborea* Thor. from Scandinavia are only races of one the same species, the former being the nominate subspecies. *P. saltuaria* is known also from nearctic areas (Greenland, Canada, Maine), BRAENDEGAARD (1946) has compared specimens from Greenland with *L. s. hyperborea* from Scandinavia and found a number of differences. He considers the Greenland specimens as belonging to *P. s. saltuaria*. The specimens in the Newfoundland collection (3 ♂♂, 11 ♀♀ 2 juvv.) agree in some characters with *saltuaria* from Greenland, in other characters not. The males have two rows of spines ventrally on tarsus I as in ssp. *hyperborea* (these spines are lacking in the specimens from Greenland according to BRAENDEGAARD op. c.). On the other hand in all specimens the light median band on the carapace is narrow and extends to a point in the ocular area as in ssp. *saltuaria*. Until I have seen material from the mainland of Canada i am not going to give any new name for the populations of this species from Newfoundland. I have used here the name *Pardosa saltuaria* L. Koch without any subspecific designation.

III. Zoogeographic aspects.

In the percentual representation of the different families in the material the spider fauna of Newfoundland shows the general features characteristic of any boreal area in the Holarctic region. In the table below the representation of the spider families (number of species in each family in the area in question and the corresponding percentage of total number of spider species in the area) in Newfoundland, Alaska (CHAMBERLIN & IVIE 1947) and »Swedish Lapland» (Torne Träsk area and Sarek, HOLM 1950, SCHENKEL 1931) are compared.

It would be natural to compare at first the spider faunas of Newfoundland and Labrador, but unfortunately this part of Canada is very little known arachnologically. The nearest area well known in this respect is New England in U.S.A. About 85 % of the species from Newfoundland are also known from the New England States. Obviously the spider fauna of Newfoundland is very closely related with the fauna of Northern New England and Nova Scotia.

A zoogeographical classification of the Newfoundland spiders meets with many difficulties. The distribution of many nearctic spiders is still too insufficiently known and it is not easy to bring together all necessary faunistic records in the literature. The geographical conditions in North America differ considerably from those in Europe. An arctic species might, for example,

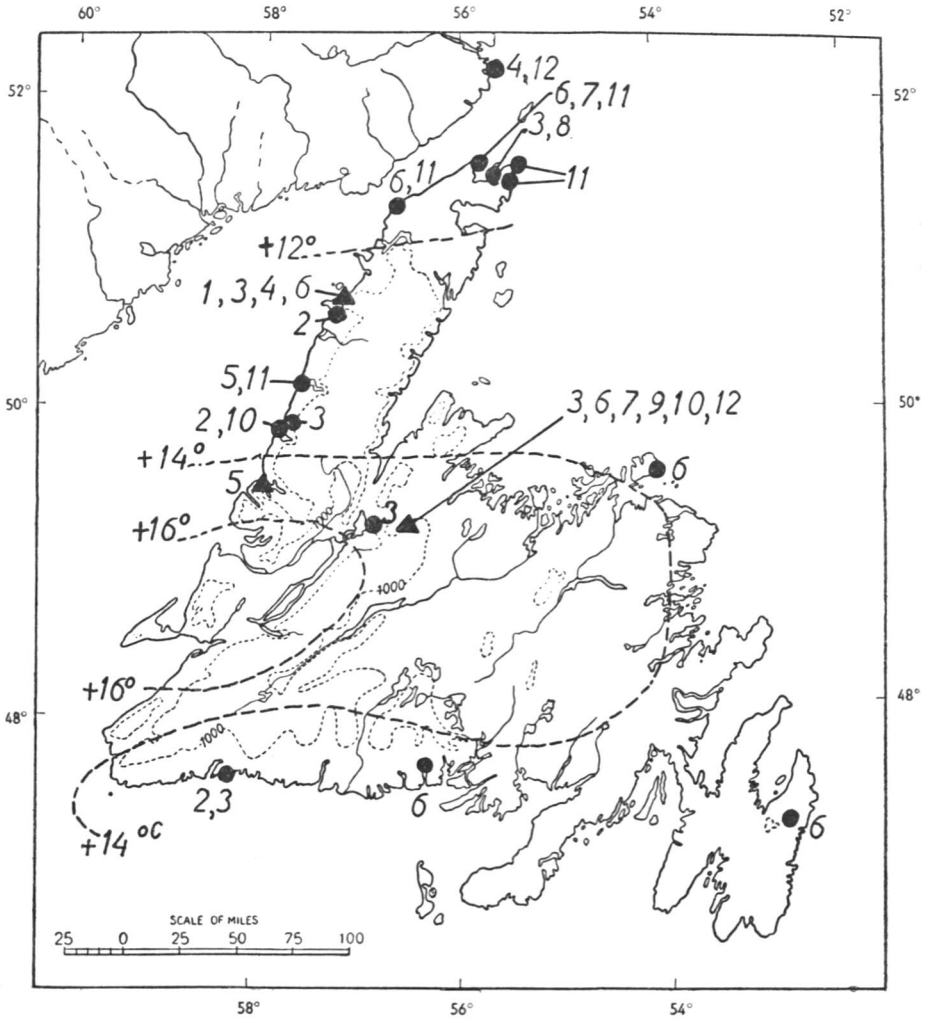
	Newfoundland	Alaska	Swedish Lapland
Theridiidae	13 (7 %)	16 (6 %)	8 (4 %)
Nesticidae	1	—	—
Linyphiidae	36 (12 %)	37 (15 %)	36 (20 %)
Micryphantidae	68 (31 %)	80 (32 %)	75 (42 %)
Araneidae	13 (6 %)	14 (6 %)	9 (5 %)
Theridiosomatidae	1	—	—
Tetragnathidae	6 (3 %)	4 (2 %)	2 (1 %)
Mimetidae	1	—	—
Agelenidae	3 (1 %)	10 (4 %)	1
Hahniidae	4 (2 %)	3 (1 %)	1
Pisauridae	3 (1 %)	1	—
Lycosidae	20 (10 %)	26 (10 %)	16 (9 %)
Gnaphosidae	7 (3 %)	7 (3 %)	9 (5 %)
Clubionidae	12 (4 %)	7 (3 %)	3 (2 %)
Xysticidae	9 (4 %)	13 (5 %)	6 (3 %)
Philodromidae	4 (2 %)	11 (4 %)	3 (2 %)
Salticidae	10 (5 %)	6 (2 %)	3 (2 %)
Dictynidae	5 (2 %)	6 (2 %)	5 (3 %)
Amaurobiidae	4 (2 %)	5 (2 %)	1
Other families	—	1	2
Total number	220 species	249 species	180 species

have an almost unbroken range in America from Alaska and Canada southward into California and Colorado in high altitudes along the mountain chains. Only detailed records can give a true picture of the zoogeographic nature of each species.

The spiders from Newfoundland obviously represent many different zoogeographical elements. As already mentioned the fauna has much in common with that of the mainland in southeast. One category more easily separated from the others is the arctic one. The arctic element forms a minor part of the fauna; only about 4 % of the total number of species in the material belong here. I have included in the group the species designated by HOLM (1950) as »arktisch—hochboreal». The species in the present material belonging to the arctic group are: *Lepthyphantes nigriventris* (?), *L. umbraticola*, *Islandiana alata*, *Erigone whymperi* (?), *Cornicularia karpinskii*, *Hilaira herniosa*, *Zornella cultrigera* and *Pardosa furcifera*.

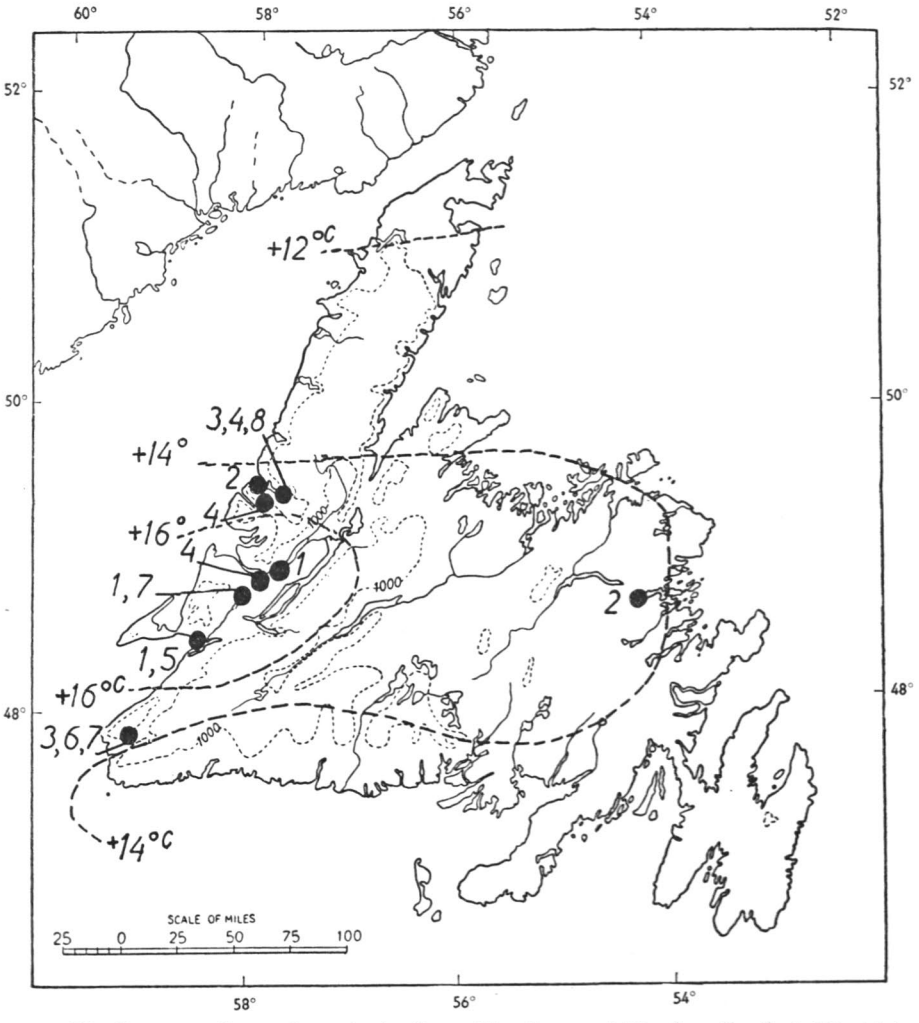
As representatives of the arctic-boreal group in Newfoundland the following species may be mentioned: *Lepthyphantes alpinus*, *Oreonetides vaginatus*, *Pardosa groenlandica*, *P. concinna*, *P. saltuaria* and *Xysticus canadensis*. There are further some species which very probably belong here, but the distribution of which is too little known. *Lepthyphantes triramus* may serve as an example.

Arctic and arctic-boreal species (see map I) are taken in Newfoundland



Map. I. The distribution of some arctic and arctic-boreal spiders in Newfoundland. 1 *Lepthyphantes nigriventris*, 2 *L. umbraticola*, 3 *L. alpinus*, 4 *Oreonetides vaginatus*, 5 *Islandiana alata*, 6 *Erigone whymperi*, 7 *Cornicularia karpinskii*, 8 *Hilaira herniosa*, 9 *Zornella cultrigera*, 10 *Pardosa concinna*, 11 *P. furcifera*, 12 *Xysticus canadensis*. (Find localities in high altitudes marked with triangular spots). Isothermes for July (at sea-level), taken from Gutsell 1949.

mainly in the northwestern peninsula (also at low altitudes), further on Gaff Topsail Mountain in Central Newfoundland and at low altitudes in the coastal areas of southern, eastern and northeastern Newfoundland. The climatic condition in these coastal areas are more arctic than in the St. Georges-Port au Port-Humber area.



Map. II. Some southern elements in the spider fauna of Newfoundland. 1 *Theridula sphaerula*, 2 *Theridion glaucescens*, 3 *Eperigone maculata*, 4 *Cornicularia minuta*, 5 *Eridantes erigonoides*, 6 *Nesticus pallidus*, 7 *Theridiosoma radiosum*, 8 *Micaria longispina*. Isothermes of July (see Map. I).

The species native to the different woodland zones of North America (the spruce-lodgepoolpine-aspen zone and the hardmaple-hemlock-birch-ash-yellowpine zone) are not as easy to classify. It seems as if the latter element might be more strongly represented in the spider fauna of Newfoundland. About 50 species might belong here but there are numerous uncertain cases. In the former group, native to the northern woodland zone of N. America I have placed such species as *Estrandia grandaeva*, *Helophora*

ontariensis, Diplocentria bidentata, Soudinus canaliculatus, Arctosa quinaria, Metaphidippus montanus and *Callioplus euoplus*. Many more species from Newfoundland might belong here and I think that an investigation of the spider fauna of Labrador would be very desirable for clarifying this point.

There are further two groups of species with wide distribution southward outside the above-mentioned two zones. One group containing eastern American species, the other species known from most areas of North America. Both groups consist of about 20 species.

In map II I have marked the find localities of some of the southern elements in the Newfoundland spider fauna. Southern elements are mainly found in the Port au Port-Humber-Lomond area, which has a warmer less extreme climate. The valleys of Southern Long Range (for example, in South Branch) are also favourable for southern species and the find of *Nesticus pallidus* in this area is significant.

Among the spiders from Newfoundland there are numerous species in common with Europe. These species will be dealt with in the in the following section.

The species described in this paper as new are most probably to be found also elsewhere in Eastern North America. Newfoundland can hardly have any endemites, at least not in the groups of aeronautic spiders to which all the new species belong.

It is not very fruitful to speculate on the origin of the spider fauna of Newfoundland, as no large collections of spiders from the eastern Labrador coast are available for study and as we do not know to what extent animal of this kind have been able to survive the last glaciation period in Newfoundland. GUTSELL (1949 p. 4) writes: »As a result of recent surveys it has been concluded that in Pleistocene times the whole of Newfoundland was completely glaciated during the latest of Wisconsin stage, and supported a thick ice-cap from which ice radiated in all directions.» FERNALD's (1925) investigations of the flora, on the other hand, seem to indicate that isolated refuges have existed. The diplopod fauna of Newfoundland studied by PALMÉN (1952) does not, however, show any features supporting FERNALD's theory. Spiders are not favourable objects for study in this connection, as the majority of them are able to spread effectively in a relatively short time over wide areas. It seems to me most probable that the bulk of the spider species have invaded Newfoundland since the Wisconsin stage of glaciation from the southwest as aeronauts. Dispersal by air is a very important factor affecting the distribution of spiders (see BRISTOWE 1939 p. 182—204). During the last few centuries transportation by man has also been a factor which must not be underestimated (further discussion on p. 40).

IV. The species common with Europe.

In the material from Newfoundland not less than 57 species have been identified by me as species also occurring in Europe. I admit that some of the cases, in which I have had only specimens of one sex for comparison need further confirmation (*Lepthyphantes nigriventris, Argyneta decora, Centromeri a bicolor, Trachynella nudipalpis*). A 58th species *Araneus diadematus* is reported from Newfoundland (WIEHLE 1931) but not present in the material of 1949 and 1951. There are further three cases of discutable synonymy which I have left open for lack of material for comparison: *Crustulina borealis* Banks — *sticta* Cambr., *Theridula sphaerula* Hentz — *opulenta* Walck., *Theridiosoma radiosum* Emert. — *gemmosum* L. Koch. The latter three cases are omitted in the following table of species common with Europe.

	North America	*Europe*	*Remarks*
Steatoda bipunctata	Northeastern	Most parts	Probably introduced from Europe
Linyphia marginata	Wide distribution	Wide distribution	Circumpolar
Helophora insignis	Boreal	± boreal, wide distr.	Circumpolar
Estrandia grandaeva	Boreal	Boreal	Circumpolar
Lepthyphantes leprosus	Northeastern	Most parts	Probably introduced into America by man.
L. nigriventris	Newfoundland?	N Scandinavia	Also in Arctic Asia.
L. umbraticola	Arctic	Arcto-alpine	Circumpolar
Bathyphantes concolor	Northeastern	Most parts	Introduced into America by man?
B. pullatus	Boreal	Wide distribution, more in the north.	Circumpolar
B. gracilis	Newfoundland	Most parts	
Oreonetides vaginatus	Arctic-boreal	Boreo-alpine	Circumpolar
Argyneta cauta	Northeastern	Boreo-montane	
A. decora	Newfoundland?	Boreo-montane	
Centromerus bicolor	Newfoundland	Wide distrib., more in the north.	Probably introd. into America fr. Europe
C. sylvaticus	Northeastern	Widely distrib.	Introduced into America fr. Europe?
Diplocentria bidentata	Boreal, montane	Boreo-montane	Circumpolar?
Thyreosthenius parasiticus	Northeastern	Mainly northern	
Islandiana alata	Arctic	Arctic, only fr. N. Scandinavia	
Erigone atra	Northern	Widely distr., mainly boreal	
Hilaira herniosa	Arctic	Boreo-alpine	Circumpolar
Trachynella nudipalpis	Newfoundland	Widely distributed	

	North America	*Europe*	*Remarks*
Walckenaera vigilax	Mainly eastern	Widely distrib.	
Cornicularia cuspidata	Northeastern, local	Mainly boreal	
C. karpinskii	Arctic	Boreo-alpine	Circumpolar
C. unicornis	Newfoundland	Widely distrib., mainly boreal	Probably introduced into America from Europe.
Diplocephalus cristatus	Northeastern	Entire Europe	Probably introduced into America fr. Europe
Dismodicus bifrons	Northern	Wide distribution	Probably circumpolar
Zornella cultrigera	Mainly arctic	Mainly arctic	Circumpolar
Trichopterna mengei	Mainly northeastern	Mainly northern	
Maso sundevalli	Boreal	Widely distrib.	Circumpolar
Meta menardi	Northeastern	Most parts, more in the south	Probably introduced into America by man.
Cyclosa conica	Wide distrib.	Wide distrib. most parts of Europe	Circumpolar
Zygiella montana	Northern	Centr. Europe, montane	Supposed to have been introduced fr. Europe into America
Araneus diadematus	Northeastern	Entire Europe	Introd. into America by man?
A. cornutus	Most parts	Entire Europe	Circumpolar
A. dumetorum	Most parts	Entire Europe	Circumpolar
A. scolopetarius	Wide distr. but more in the south	Most parts but more in the south	
A. displicatus	Wide distrib.	Wide distrib.	
Tetragnatha extensa	More boreal?	Entire Europe	Circumpolar?
Pirata piraticus	Most parts	Most parts	Circumpolar?
P. insularis	Northeastern	Mainly boreal?	
Alopecosa aculeata	Boreal	Most parts	Circumpolar
Arctosa alpigena	Boreal	Boreo-alpine	Circumpolar?
Trochosa terricola	Wide distrib.	Wide distrib.	Circumpolar
Pardosa furcifera	Arctic	Iceland	Mainly nearctic
P. groenlandica	Arctic-boreal	Iceland	Mainly nearctic
P. saltuaria	Arctic-boreal	Boreo-alpine	
Gnaphosa muscorum	Widely distrib., mainly eastern	Widely distrib.	Also in Siberia
Haplodrassus signifer	Widely distr.	Widely distrib.	Also in Siberia
Zelotes subterraneus	Most parts	Most parts; not in the British Isles.	Circumpolar
Clubiona norvegica	Northeastern?	Northern	
C. kulczynskii	Boreo-montane	Boreo-alpine	
Micaria pulicaria	Northeastern	Widely distrib.	Also in Siberia
Misumena vatia	Entire N America	Entire Europe	Circumpolar
Philodromus rufus	Most parts	Widely distrib. but more southern	Also in Siberia

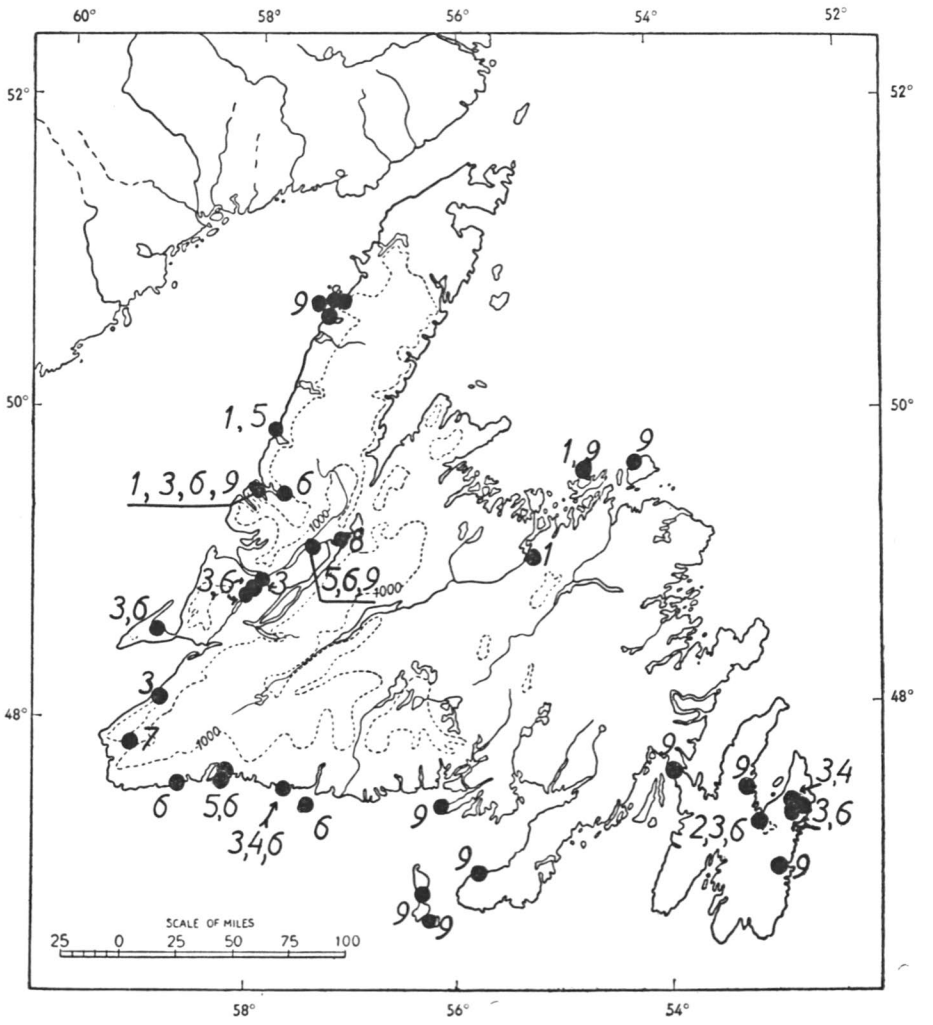
	North America	*Europe*	*Remarks*
Thanatus formicinus	Northern	Entire Europe	Circumpolar
Tibellus maritimus	Widely distrib., not in S W	Widely distrib.	Circumpolar
Salticus scenicus	Widely distrib.	Entire Europe	Introd. fr. Europe to America by man?

Among the species in the table, there are 24 which have a more or less continuous circumpolar distribution and could be designed as northern holarctic species. Some of them are still little known in regard to their occurence in Siberia, and there may be large gaps in their distribution. 11 species are supposed to have been introduced into America from Europe. It is an acknowledged fact that several spiders which have come with cargoes have been able to establish themselves in suitable biotopes in another continent (BRISTOWE 1939, p. 180—182). Some synanthropic spiders, such as *Tegenaria derhami* Scop., *Pholcus phalangoides* Fuessly, and *Theridion tepidariorum* L., are now nearly cosmopolitan. In the material from Newfoundland there are no »true house spiders», but the members of the expedition did not especially search for such species and their absence from the material may have no significance. There are, however, a number of spiders which occur both in natural habitats and on walls and fences, and in cellars, etc. As examples from the Newfoundland material the following could be mentioned: *Steatoda bipunctata, Lepthyphantes leprosus, Meta menardi, Araneus scolopetarius* and *Salticus scenicus*. The two latter species are widely distributed in the Nearctic region and it is not certain that they were originally introduced into America from Europe by man. On the other hand they could very well have come to Newfoundland as anthropocores from the mainland or from Europe. COMSTOCK (1948 p. 501) reports of *Araneus scolopetarius*: »This is the most common species of *Aranea* about buildings and other wooden structures; and it is sometimes exceedingly abundant on buildings that are near water. It is rarely found on plants away from houses.» *Zygiella montana* is mentioned by WIEHLE (1931) as a probable anthropocore in America, but its type of distribution seems not to give much support for this opinion.

Small spiders ocurring in Europe frequently among debris, under pieces of wood, etc., i.e. in strongly culture-influenced habitats, could easily have been introduced into Newfoundland with ballast. Such species in the material are:

Bathyphantes concolor
Centromerus bicolor
» silvaticus
Cornicularia unicornis
Diplocephalus cristatus
Micaria pulicaria

Centromerus bicolor and *Cornicularia unicornis* have not been recorded before from the Nearctic region. A further European species found in New-



Map. III. Species which might have been introduced by man, or which are known to occur in strongly culture-influenced biotopes. 1 *Steatoda bipunctata*, 2 *Lepthyphantes leprosus*, 3 *Bathyphantes concolor*, 4 *Centromerus bicolor*, 5 *Cornicularia unicornis*, 6 *Diplocephalus cristatus*, 7 *Meta menardi*, 8 *Araneus scolopetarius*, 9 *Micaria pulicaria*.

foundland but not as far as I know in the mainland of North America is *Trachynella nudipalpis*. The habits of this species, however, gives no special reason to suppose anthropocory.

In a paper dealing with the terrestrial Isopods of Newfoundland PALMÉN (1951 p. 22) points out that this country, and the Avalon Peninsula especially, is one of the most favoured areas for the introduction of Old World organisms into North America. All 12 species of terrestrial Isopods found in Newfound-

land are common also to Europe and all of them are known from the Avalon Peninsula. All the 15 European Diplopods so far recorded from Newfoundland (PALMÉN 1952) occur on the Avalon Peninsula, 10 of them not taken in other parts of the country. On the other hand only 5 of the spider species supposed to have been introduced from Europe are taken on the Avalon Peninsula (see map. III). It must be kept in mind that all the spider species in question are areonautic and cannot be expected to present the same type of distribution as the Isopods and Diplopods, where the methods of dispersal are easier to follow.

The proportion of species in common with Europe in my list of Newfoundland spiders is as high as 26 %. It is of interest to compare this with corresponding percentages in lists of spiders from other areas of North America, and I have tried to do so in the table below.

	Percentage of spp. common with Europe	Total number of spp. listed	References
Newfoundland	26 %	220	
New England	10 %	664	KASTON 1948
New York	8,5 %	533	CROSBY & BISHOP 1928a
Michigan	15 %	260	CHICKERING 1932–1935, CH. & BACORN 1933
Wyoming & neighbouring states	17 %	137	LEVI & LEVI 1951
Alaska	20 %	249	CHAMBERLIN & IVIE 1947
Georgia	3,5 %	497	CHAMBERLIN & IVIE 1944

The areas compared are, of course, of different size and studied arachnologically in different degrees. The percentages decrease rapidly in a southward direction. Changes of the percentage along the latitudes are of more interest. It could be expected that the number of species distributed from Europe over Siberia to North America would decrease there in an eastward direction. The percentages from Wyoming, Michigan and New England indicate such a tendency. The conspicuously high percentage in Newfoundland might support the opinion that several species (not only spiders generally known as anthropocores) have been introduced there from Europe in some or other way.

V. Vicariants among the spiders of Newfoundland and Northern Europe.

Nearly all the spider species common to Newfoundland and Europe occur in Fennoscandia. In the case of more or less circumpolar species one would expect to find racial differences by comparison of material from Newfoundland and Fennoscandia. This is also the case in *Dismodicus bifrons* (see p. 29) and *Trochosa terricola* (see p. 32). In most other cases the material available from one or both areas concerned has been too small to detect constant minor racial differences.

It is a well known fact that it has not yet been possible to apply the principles of »the new systematics» to any great extent to spiders. It is quite probable that many closely related allopatric forms, now considered as distinct species, will turn out to be subspecies when more material is brought together for study. Among the close vicariant species of Newfoundland and Fennoscandia such cases might be found. I have already dealt with some cases probably belonging to this category in section II (see p. 10).

The following pairs of very closely related species not considered in section II are listed here:

Hypomma marxi Keys.	Hypomma bituberculata Wid.
Hahnia cinerea Emert.	Hahnia mengei Chyz. & Kulsz.
Antistea brunnea Emert.	Antistea elegans Bl.
Pardosa fuscula Thor.	Pardosa atrata Thor.
Haplodrassus hiemalis Emert.	Haplodrassus moderatus Kulcz.
Clubiona canadensis Emert.	Clubiona stagnatilis Chyz. & Kulcz.
Agroeca ornata Banks	Agroeca brunnea Bl.
Evarcha hoyi Peckham	Evarcha falcata Cl.

Lepthyphantes zebra Emert. is very similar to *L. flavipes* Bl. of Europe. The latter species is recorded from Denmark but I have not seen it mentioned in the literature from Fennoscandia. It might further be added that *Ctenium lyriferum* Holm from northernmost Fennoscandia is replaced in Newfoundland by a group of species, *Ctenium boreale* Kaston, *C. banksi* Kaston and *C. riparium* Emert. In Alaska there occurs a species of this group, *C. arcticum* Cham. & Ivie, which is intermediate between the three latter mentioned species and *lyriferum*. *Neon nellii* Peckham stands between *N. robustus* Lohmander (from Sweden) and *Neon reticulatus* Bl., which are already difficult to separate.

The similarity of the spider faunas of Newfoundland and Northern Europe is also shown in the great number of genera common to the two areas. The

numerous genera in the family *Micryphantidae*, however, still afford revision and there is much to be done to connect the American and European Micryphantid systematics.

VI. Notes on the Biology of the Newfoundland spiders.

In case of most of the species in the material the data are insufficient to draw phenological conclusions. In *Trochosa terricola pratensis*, however, the time for the last moult and for the egg-laying is clearly shown and the species is found to be biennal in Newfoundland (see p. 78). In section VII of this paper I have included small tables showing the seasonal distribution of the mature males and females (and immatures if sure identification has been possible) for numerous species. In some of these tables the approximate time for maturity is shown. It must, however, be mentioned that in case of species occurring only in a certain part of Newfoundland the table might be misleading, because of the limited time which the expedition of 1949 could spend in the different parts of the country (for example: Avalon Peninsula, beginning of June and late August; Northwestern peninsula, mainly middle of July). Prof. LINDROTH's material of 1951 filled at least some of the gaps.

In several species the number of adult males in the material is unusually low in comparison wich the number of females. As extreme examples we may take *Trochosa terricola pratensis:* 17 ♂♂, 120 ♀♀ and *Callobius bennetti:* 1 ♂ 36 ♀♀. One reason is, of course, the relatively short life span of the adult males. It is very probable that the males of these might be more numerous in material collected in September or in the early spring. In the *Clubiona* species the sex ratio among adult specimens is not at all extreme: *C. canadensis:* 12 ♂♂, 34 ♀♀. Both sexes of this species are found throughout the summer.

The descriptions (in Dr. PALMÉNS diary) of the biotopes where the spider samples were taken gives in several cases an idea of which habitat is preferred by a certain species. In section VII I have given in a few words a characteristic habitat for each as far as has been possible. In the case of a species taken in highly various habitats, I have not found it necessary to mention all these habitats but only their common features, if any.

In the autecology of spiders the degree of humidity plays a very important part. Small microclimatic differences in this respect may remarkably influence the composition of the spider fauna of the different biotopes. The majority of the samples in the material contain a relatively small number of species

and a detailed ecological classification of the spiders is in most cases not possible.

Numerous samples were taken by sifting forest litter. The largest of these samples are from mixed forest or groves of *Abies, Picea mariana, Alnus, Acer* and *Betula*. The ground vegetation in these biotopes would be very variable, but a common feature is the thick layer of litter. Most of the spiders taken from there are also represented in samples from other kinds of forests. Small Linyphiids and the Micryphantids predominate. More common sp ders in the forest litter samples are:

Centromerus latidens
Sciastes truncatus
Diplocentria bidentata
Tapinocyba simplex
Tranchynella nudipalpis
Diplocephalus cuneatus
Souessa spinifera
Ceraticelus fissiceps
Ceratinella brunnea
Cryphoeca montana
Neoantistea riparia radula
Agroeca ornata
Walmus borealis

A sifting sample from a *Picea mariana* — swamp at an altitude of 1400 ft. on Gaff Topsail Mountain shows a mixture of common forest litter spiders and arctic and subarctic species (number of specimens in parentheses):

Ctenium fuscum (2)
C. boreale (2)
Lepthyphantes alpinus (1)
Argyneta cauta (1)
Sciastes truncatus (2)
Diplocentria bidentata (7)
Sisicottus montanus (21)
Cornicularia auranticeps (1)
Cornicularia karpinskii (1)
Trachynella nudipalpis (2)
Zornella cultrigera (1)
Grammonota gigas (2)
Ceratinella brunnea (1)
Agroeca ornata (1)
Xysticus canadensis (2)
Amaurobius bennetti (1)

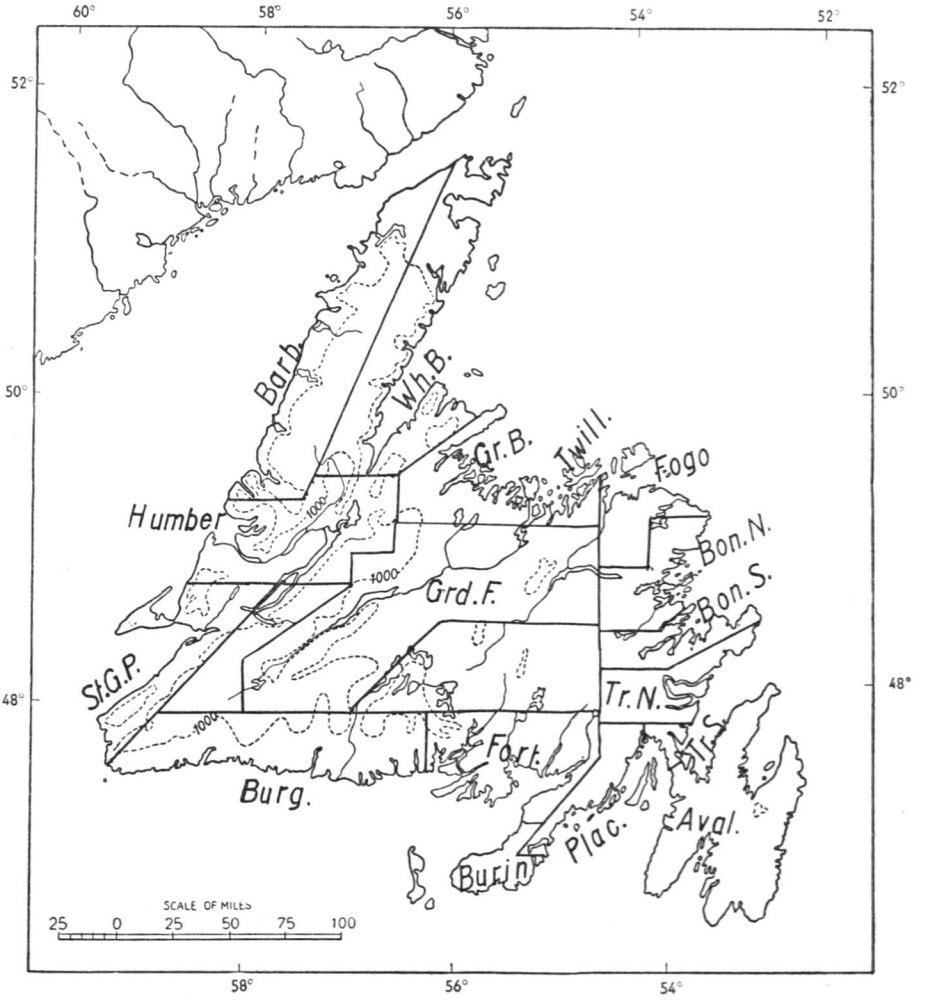
The samples taken in bogs of different kinds contain rather few species each but altogether more than 20 species. An ecological classification of these based on short notes in a diary is not possible except in very few cases.

Among the spiders living on open, stony and more or less moist ground (sea shores, river banks etc.) the following species appear to be abundant in most parts of Newfoundland: *Coras montanus, Pardosa fuscula, P. groenlandica* and *P. xerampelina*.

Under stones on drier open ground *Theridion tectum, Gnaphosa muscorum* and *Zelotes subterraneus* seem to be characteristic. In this connection it is interesting to note that *Trochosa terricola*, which, at least in Fennoscandia, is a typical sublapidicole on drier soils, very frequently occurs in Newfoundland (ssp. *pratensis*) on moist ground in shady places (maple groves etc.).

Among the spiders of the coastal tundra the big Salticids of the genus *Phidippus* are characteristic especially on sunexposed stony places.

Several of the spiders occuring in the open biotopes mentioned above are also found in places greatly influenced by settlements.



Map IV. The counties of Newfoundland.

VII. Find records.

In the map of Newfoundland published in 1941 by the Department of Natural Resources (Crown Land and Survey Branch) the country has been divided into a number of administrative counties. In listing the find localities of the spiders I have used the

names of these counties (abbreviated as seen below). The Avalon Peninsula, however, is considered as a single county (see map IV).

St. Georges — Port au Port	S t. G. P.
Burgeo — La Poile	B u r g.
Fortune Bay and Hermitage	F o r t.
Placentia	P l a c.
Trinity South	T r. S.
Trinity North	T r. N.
Avalon Peninsula	A v a l.
St. Barbe	B a r b.
White Bay	W h. B.
Green Bay	G r. B.
Grand Falls	G r d. F.
Twillingate	T w i l l.
Fogo (incl. Fogo Island)	F o g o
Bonavista North	B o n. N.
Bonavista South	B o n. S.
Area (S of G r d. F.) unnamed on the map, including Lake St. John	L. S t. J.

Abbreviations of the collectors' names: E. Palmén — E.P., C. H. Lindroth — C.L.

Theridiidae

Ctenium riparium Keys. This species has been collected by sifting leaf mould in humid and shady places (brook valleys, river shores, etc.). Seasonal distribution of adult specimens in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	1	2	3	—	—	—	—	—
females	—	8	4	16	—	—	—	—	—

Localities: S t. G. P. : Table Mountains (1500 ft.), South Branch. B u r g. : Grand Bruit, Cinq Cerf River, Grandy Brook (Burgeo).

Known from Quebec, Ontario, Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, North Carolina, Tennessee, Michigan, Minnesota, South Dakota, Wyoming and Alaska (KASTON 1946, CHAMBERLIN & IVIE 1947).

Ctenium banksi Kaston. Taken in biotopes similar to those of the preceeding species. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	1	1	—	—	—	—	—	—	—
females	4	4	—	4	1	1	—	1	—

Localities: S t. G. P.: South Branch, Stephenville Crossings, B u r g.: Cinq Cerf River, F o r t.: Terrenceville, H u m b e r: Deer Lake, B a r b.: Lomond, Cow Head, L. S t. J.: Lake St. John.

Ontario, New Hampshire, Vermont, Massachusetts, New York, New Jersey, Maryland, Michigan and Wisconsin (KASTON 1946).

Ctenium boreale Kaston. Sifted from peat in two localities: H u m b e r: Gaff Topsail 20.8.1949, 1 ♀ in a Picea mariana swamp at an altitude of 1400 ft. (E.P.), B a r b.: Cow Head 12.8.1949, 1 ♀ (E.P.). This species has been previously reported from Ontario, Maine, New York and Michigan (KASTON 1946).

Ctenium fuscum Emert. Among dead leaves but also under stones and pieces of wood on the ground in humid places of various kinds. Seasonal distribution of adults:

	June			July			August		
	1—10	11—30	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	3	—	—	1	—	—	2	—
females	—	3	1	—	5	7	1	1	—

Localities: B u r g.: Port aux Basques, Grand Bruit, Burgeo Gaff Topsail (1400 ft.) Ramea Island, Recontre West, H u m b e r: Kittys Brook, B a r b.: Lomond, Serpentine Mountains (above the timber line, 2000 ft.), Cow Head, Eddies Cove West, Doctors Hill, Daniels Harbour, W h. B.: Bartletts River (Pistolet Bay), Ha Ha Bay (Raleigh).

Labrador, Ontario, Maine, New Hampshire, Vermont, Connecticut, New York, Michigan, Minnesota, Wyoming, Alberta and Alaska (KASTON 1946, CHAMBERLIN & IVIE 1947).

Crustulina borealis Banks. Only from one locality: B a r b.: Doctors Hill, South Summit 29.7.1949, 2 ♀♀ under a stone on a heath at 1000 ft. (E.P.). This species is known from the northeastern states of U.S.A., Western Canada, the Rocky Mountains and Alaska (CHAMBERLIN & IVIE 1947).

Steatoda bipunctata L. Taken in shady places, one specimen in conifer forest, the three others in villages, probably on walls or fences.

Localities: B a r b.: Woody Point 21.7.1949, 1 ♀ (E.P.), Cow Head 8.8.1949, 1 ♀ (E.P.). G r d. F.: Norris Arms 24.8, 1 juv. (E.P.). T w i l l.: Twillingate 4—8.7. 1951, 1 ♀ (C.L.).

Northern New England, most parts of Europe and in Siberia eastward to Kamchatka. (CHARITONOV 1932, BRISTOWE 1939, KASTON 1948).

Theridula sphaerula Hentz. In bushes and tall grass on river shores and in edges of pools.

Localities: S t. G. P.: Stephenville Crossings 6.7. 1949, 1 ♀ (E.P.), Spruce

Brook 8—9. 7. 1949, 2 ♀♀ (E.P.). H u m b e r : Steady Brook 10.7. 1949, 2 ♀♀ (E.P.).

Known from Eastern North America (New York — Florida) and British Columbia. (KASTON 1948).

Theridion tectum Keys. This sublapidicole species seems to prefer more or less dry ground and frequently occurs in culture-influenced places. Seasonal distribution of the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males ad.	—	—	—	1	—	—	—	—	—
females ad.	—	—	3	9	7	2	—	—	1
immatures	—	—	—	4	1	1	1	1	3

Localities: S t. G. P.: Table Mountains, South Branch, Stephenville Crossings, St. Fintans, Spruce Brook, B u r g.: Burgeo, H u m b e r : Deer Lake, B a r b.: Lomond, St. Barbe, Doctors Hill (above the timber line), W h. B.: Griquet, Fourché Harbour, G r d. F.: Glenwood, Lewisporte, B o n. N.: Gambo.

Known from the northeastern states of U.S.A. and Southern Canada.

Theridion aurantium Emert. In the vegetation of maple groves but also in leaf mould.

S t. G. P.: South Branch 3.7. 1949, 3 ♀♀, one of them with dark carapace (E.P.), Spruce Brook 8—9.7. 1949, 2 ♂♂ 4 ♀♀ (E.P.). B u r g.: Grandy Brook (Burgeo) 20.6. 1949, 1 ♀ (E.P.). H u m b e r : Corner Brook 11.7. 1949, 1 ♀ with dark brown carapace (E.P.). G r d. F.: Millertown 14.6. 1951, 1 ♀ (C.L.), Lewisporte 26—27.6. 1951, 1 ♀ (C.L.). F o g o : Tilting 29.6. 1951, 1 ♀ (C.L.).

The species is known from Eastern Canada, Northern New England, Wisconsin and Alaska (CHAMBERLIN & IVIE 1947, KASTON 1948, LEVI 1951).

Theridion sexpunctatum Emert. In biotopes similar to those of the preceeding species.

B u r g.: Recontre West (Big Bay) 18.6.1949, 1 ♀ (E.P.), B a r b.: Woody Point, Winter House 16.7. 1949, 1 subad. ♂ (E.P.).

Known from Canada, New England, Montana, Wyoming, and Alaska (GERTSCH & JELLISON 1939, CHAMBERLIN & IVIE 1947, LEVI & LEVI 1951).

Theridion (Allotheridion) montanum Emert. Taken only at S t. G. P.: South Branch 2.7.1949, 1 ♀ (C.L.). The species is known from Northern New England and from New York (CROSBY & BISHOP 1928a, KASTON 1948).

Theridion (Allotheridion) glaucescens Becker. Collected by sweeping vegetation aroud bog pools.

B a r b.: Woody Point, the village, 17.7.1949, 1 ♀ (E.P.). B o n. N.: Gambo 25.8.1949, 1 ♀ (E.P.).

Eastern North America, southernmost finds in the Georgia region. (CHAMBERLIN & IVIE 1944, KASTON 1948).

Theridion (*Allotheridion*) *murarium* Emert. (?). Three immature specimens taken by shaking bushes at H u m b e r: Steady Brook 10.7.1949 (E.P.). *T. murarium* occurs in Southern Canada westward to British Columbia, in New England, New York to Colorado, Arizona and Washington (CHICKERING & BACORN 1933).

Nesticidae

Nesticus pallidus Emert. A cave-spider found in one locality in Newfoundland: S t. G. P.: South Branch 3.7.1949, 1 ♀ sifted from leaf mould on the western slope of Long Range. In the same place also another cave-spider, *Meta menardi*, was found (E.P.). *Nesticus pallidus* is known from Massachusetts and from the southern states of U.S.A. The species is obviously rare in the North (CHAMBERLIN & IVIE 1944, KASTON 1948).

Linyphiidae

Stemonyphantes blauveltae Gertsch. A single immature specimen swept from the vegetation above the timber line on Doctors Hill (B a r b.) 31.7.1949 (E.P.). This species is known from Ottawa, New Hampshire, Connecticut, Rhode Island, New York, Distr. Columbia, Virginia, Ohio, Indiana, Utah, Montana and Washington. (*S. lineatus* of BLAUVELT 1936 and KASTON 1948, GERTSCH 1951).

Pityohyphantes costatus Hentz. Found in the herbaceous vegetation and on lower branches of trees.

B u r g.: Grandy Brook (Burgeo) 24.6.1949, 1 juv. (E.P.), Big Bay (Recontre) 17—19.6.1949, 1 ♂ (E.P.), Hare Bay 21.6.1949, 1 ♀ (C.L.). S t. G. P.: Spruce Brook 8—9.7.1949, 1 ♂ (E.P.). H u m b e r: Deer Lake 3.6.1951, 1 ♀ (C.L.). B a r b.: Lomond 15.7.1949, 1 ♀ (E.P.).

Labrador, Nova Scotia, Maine, New Hampshire, Connecticut, Massachusetts, New York, Distr. Columbia, Virginia, North Carolina, Tennessee, Indiana, Illinois, Michigan and Wisconsin (BLAUVELT 1936, CHAMBERLIN & IVIE 1943, KASTON 1948).

Linyphia marginata C. L. Koch. Only two specimens in the material, swept from the herbaceous vegetation. S t. G. P.: St. Fintans 3—4.7.1949, 1 ♂ (E.P.). B u r g.: Big Bay (Recontre) 17—19.6.1949, 1 ♀ (C.L.).

The species is widely distributed in Canada and known from nearly all the states of U.S.A. In Europe *L. marginata* is reported from most countries. (BRISTOWE 1939, BLAUVELT 1936).

Linyphia waldea Chamb. & Ivie. Found in various habitats: in herbaceous vegetation, under stones and in forest litter.

A v a l.: South Side Hills (St. Johns') 4.6.1949, 1 ♂ (E.P.), Holyrood 30.8. 1949, 1 ♂ (E.P.).. H u m b e r.: Corner Brook 14.8.1949, 2 ♀♀ (E.P.), Deer Lake 3.6.1951, 1 ♂ (C.L.). F o g o: Seldom 3.7.1951, 1 ♀ (C.L.). B o n. N.: Gambo 25.8.1949, 2 ♀♀ (E.P.).

Maine, New Hampshire, Massachusetts, Connecticut, New York, Distr. Columbia, North Carolina, Michigan and Ohio (*L. clathrata* of BLAUVELT 1936).

Pusillia mandibulata Emert. Most specimens collected in moist meadows. A v a l.: Cape Broyle 8.6.1949, 1 ♀ (E.P.), Waterford Bridge 5.6.1949, 6 ♀♀ (E.P.), Holyrood 10.6.1949, 1 ♀ (C.L.), 30.8.1949, 1 ♀ (E.P.), Hogans Pond 6.6.1949, 2 ♀♀ (E.P.). H u m b e r: Deer Lake 25.7.1951, 1 ♀ (C.L.). G r d. F.: Victoria Lake 11—13.6.1951, 1 ♀ (C.L.). Millertown 10.6.1951, 1 ♀ (C.L.), B o n. N.: Gander 2.6.1949, 1 ♂ (E.P.).

The Newfoundland specimens belong to the nominate subspecies, which is distributed from northeastern North America to the Rocky Mountains where it is replaced by other subspecies and in the Northwest by the very close related species *P. bonita* Chamb. & Ivie.

Estrandia grandaeva Keys. Shaken from the lower branches of trees and from bushes, also sifted from forest litter.

S t. G. P.: Spruce Brook 8.7.1949, 1 ♂ 1 ♀ (E.P.). B a r b.: Lomond 15.7. 1949, 1 ♀ (E.P.), Eddies Cove West 30.7.1949, 1 ♀ (E.P.). W h. B.: Bartletts River 19.7.1949, 2 ♀♀ (C.L.).

Known from Labrador, Nova Scotia, Alberta, Alaska, Maine, New Hampshire, Massachusetts, New York, Virginia, North Carolina and Tennessee. In the southern part of its range on high mountains, e.g. taken at altitudes of 2000 ft. and higher in the mountains of Massachusetts. (*E. nearctica* of BLAUVELT 1936, CHAMBERLIN & IVIE 1947, KASTON 1948). In the Old World this species is found in Kamchatka (*Linyphia tridens*, SCHENKEL, 1930) and in Northern Fennoscandia (FORSSLUND 1945).

Helophora insignis Bl. Only one sample in the material contains this species: B o n. N.: Gambo 25.8.1949, 1 ♀ 2 juv. swept from the vegetation in mixed forest (E.P.).

Known from Nova Scotia, Quebec, Ontario, NW Terr. of Canada, Alaska, Maine, New Hampshire, Massachusetts, New York, New Jersey, Pennsylvania, Michigan and Utah (BLAUVELT 1936, CHAMBERLIN & IVIE 1947). Widely distributed in the Palearctic region, a common species in Fennoscandia.

Helophora ontariensis Emert. On open wet ground among litter and debris.

T r. S.: Come by Chance 27.8.1949, 1 ♀ (E.P.). B a r b.: St. John Island 3.8.1949, 1 ♀ (E.P.). G r d. F.: Millertown Junction 22.8.1949, 1 ♀ (C.L.), Norris Arms 24.8.1949, 1 ♀ (E.P.). B o n. N.: Gambo 26.8.1949, 1 ♀ (C.L.).

Ontario, Western Canada, The Rocky Mountains, Alaska and from New York: Beaver River Flow (BLAUVELT 1936, CHAMBERLIN & IVIE 1947).

Lepthyphantes leprosus Ohl. A single female taken in A v a l.: Holyrood 30.8.1949, in culture-influenced biotope (E.P.). Known from Nova Scotia, New Hampshire, Connecticut, New York, Rhode Island, Michigan and Ohio (ZORSCH 1937, KASTON 1948). A common and widely distributed spider in Europe.

Lepthyphantes zebra Emert. All specimens in the material are females. They were collected by sifting dead leaves in shady places but were also found under stones. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	3	1	5	7	7	1	1	—

Localities: S t. G. P.: Table Mountains (at 1500 ft.), South Branch, B u r g.: Cinq Cerf River, Recontre West, H u m b e r: Corner Brook, B a r b.: Lomond, Cow Head.

Quebec, Ontario, Maine, Massachusetts, Connecticut, Vermont, New York, Michigan, North Carolina, Tennessee, Alberta, British Columbia, Washington and Alaska (ZORSCH 1937).

Lepthyphantes alpinus Emert. Occurs in Newfoundland not only in mountains but also in river valleys at low altitudes. Collected by sifting litter in conifer forests.

B u r g.: Grand Bruit 13.6.1949, 1 ♀ (E.P.), H u m b e r: Kittys Brook 18.8.1949, 1 ♀ (E.P.), Gaff Topsail 20.8.1949, 1 ♀ in a Picea mariana swamp at 1400 ft. (E.P.). B a r b.: Stanford River 11.8.1949, 1 ♀ (E.P.), Doctors Hill 29.7.1949, 1 ♀ in the uppermost coniferous forest zone (E.P.). W h. B.: Ha Ha Bay (Raleigh) 18.7.1949, 1 ♀ (C.L.).

Known from Quebec, Alberta, Maine, New Hampshire, Vermont, Georgia, Colorado and Alaska. Only at higher altitudes in the south of its range. (ZORSCH 1937, CHAMBERLIN & IVIE 1944, 1949).

Lepthyphantes subalpinus Emert. Known before from Newfoundland: A v a l.: Baccalieu Island (Zorsch 1937). Two females in the material of 1949, H u m b e r: Kittys Brook 18.8.1949, Alnus thicket (E.P.), B a r b.: Serpentine Mountains 17.7.1949, above the timber line (E.P.).

Known further from Quebec, Ontario, New Hampshire and New York (ZORSCH op.c.).

Lepthyphantes calcaratus Emert. Two finds of this rare spider: B a r b.: Eddies Cove West 2.8.1949, 1 ♀ among litter in Picea-Abies forest (E.P.), Doctors Hill 31.7.1949, 1 ♂ above the timber line (C.L.). Known before only from Quebec (ZORSCH op.c.).

Lepthyphantes bihamatus Emert. One female taken by sifting litter in an Abies-Picea-Alnus thicket above the tide zone on the shore at B u r g.: Grand Bruit 26.6.1949 (E.P.). Reported by ZORSCH (op.c.) only from Quebec.

Lepthyphantes triramus Chamb. & Ivie. Two females, by sifting litter in shady places. B u r g.: Recontre West 18.6.1949 (C.L.) and A v a l.: Hogans Pond 6.6.1949 (E.P.). The species was only previously known from the NW Territories of Canada and from Alaska (CHAMBERLIN & IVIE 1947).

Lepthyphantes nigriventris C. L. Koch (?). One female not differing essentially from the Swedish specimens I have had for comparison. B a r b.: Doctors Hill 29.6.1949, sifted from litter in the uppermost forest zone (E.P.). *L. nigriventris* is an arctic species previously known from Siberia and the northernmost parts of Fennoscandia (HOLM 1950).

Lepthyphantes umbraticola Keys. Sifted from moss and litter in a river valley, in a conifer forest and in a Myrica-Kalmia-Carex bog.

B u r g.: Grand Bruit 13.6.1949, 1 ♀ (E.P.). B a r b.: Cow Head 10.8.1949, 1 ♀ (E.P.), Port Saunders 5.8.1948, 1 ♀ (E.P.).

The species is known from Labrador, Alberta, Alaska, Greenland, Iceland, Scotland, Northermost Fennoscandia, Spitzbergen and from the Alps (BRAENDEGAARD 1946, CHAMBERLIN & IVIE 1947, HOLM 1950, SCHENKEL 1950).

Bathyphantes pullatus Cambr. Taken by sifting litter in a Carex bog, in a wet meadow and in forests.

B u r g.: Grand Bruit 24.6.1949, 1 ♀ (E.P.). T r. S.: Come by Chance 27.8.1949, 2 ♀♀ (E.P.). A v a l.: Waterford Bridge 5.6.1949, 1 ♂ (E.P.). B a r b.: Cow Head 12.8.1949, 1 ♀ (E.P.).

Known previously from Alaska and Wyoming (LEVI & LEVI 1951) in the Nearctic region. Widely distributed in the Palearctic region, a common species in Fennoscandia. Reported by CHARITONOV (1933) from U.S.S.R. only from Leningrad and Kamchatka.

Bathyphantes concolor Wid. One of the more common Linyphiids in Newfoundland. Occurs among litter and under stones in shady moist places. 7 of the 15 samples containing this species are from culture-influenced biotopes. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	5	—	—	2	1	—	—	1	4
females	12	—	3	4	2	1	—	1	12

The material is not big enough to give a clear picture of the life cycle, but the higher numbers of adults on the beginning and end of the summer indicate that this species hibernates as the adult.

Localities: S t. G. P.: St. Fintans, Piccadilly, Spruce Brook, B u r g.: Burgeo, A v a l.: Holyrood, Waterford Bridge, Hogans Pond, South Side Hills (St. Johns'), H u m b e r : Cooks Brook, Corner Brook, B a r b.: Woody Point.

The species is known from Eastern Canada and New England and from most countries in Europe.

Bathyphantes brevipes Emert. The species has been identified by Dr. GERTSCH. The spider is taken among litter and under stones on various types of ground. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	2	1	1	2	—	—	—
females	1	4	1	—	7	5	—	2	—

Localities: S t. G. P.: Table Mountains (at 1500 ft.), B u r g.: Port aux Basques, Grand Bruit, Ramea Island, A v a l.: Hogans Pond, H u m b e r : Deer Lake, B a r b.: Woody Point, Doctors Hill (up to 1000 ft.), Doctors Brook, Flowers Cove, W h. B.: Bartletts River, Cooks Harbour, Quirpon, G r d. F.: Victoria Lake, B o n. S.: Terra Nova.

Alaska and the Pacific coast area of U.S.A. (according to CHAMBERLIN & IVIE 1947). Not reported from New England.

Bathyphantes pallidus Banks. Among litter and under stones in various biotopes. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	2	—	1	1	1	—	1	—
females	—	3	2	—	2	4	5	—	—

Localities: S t. G. P.: Table Mountain (1500 ft.), South Branch, Spruce Brook, H u m b e r : Kittys Brook, B a r b.: Cow Head, Port Saunders, Daniels Harbour, Doctors Hill (above the timber line), St. John Island, W h. B.: Quirpon, Fourché Harbour.

Widely distributed in Canada, eastern and western states of U.S.A., and Alaska (CHAMBERLIN & IVIE 1947).

Bathyphantes sp. (pr. *reprobus* Kulcz.). Sifted from leaf mould in shady places. B u r g.: Grand Bruit 13.6.1949, 1 ♀ (E.P.), H u m b e r : Deer Lake 3.6.1951, 1 ♀ (C.L.). G r d. F.: Badger 22—25.6.1951, 1 ♀ (C.L.).

Bathyphantes brevis Emert. All specimens found among dead leaves at the margins of moor ponds.

S t. G. P.: South Branch 4.7.1949, 1 ♀ (E.P.), H u m b e r : Deer Lake 30.5.1951, 1 ♀ (C.L.). B a r b.: Cow Head 8.8.1949, 1 ♀ (E.P.). G r d. F.: Badger 22—25.6.1951, 1 ♀ (C.L.).

New England and Michigan (CHICKERING 1933, KASTON 1948).

Bathyphantes gracilis Bl. B a r b.: St. Barbe 26.7.1949, 1 ♀ under a stone on the sea shore (E.P.). G r d. F. Badger 22—25.6.1951, 1 ♀ (C.L.).

Not previously reported from North America. Widely distributed in the Old World: British Isles, Fennoscandia, Central and East Europe, Siberia eastward to Kamchatka (BRISTOWE 1939).

Bathyphantes rufulus n.sp. Swept from herbaceous vegetation in various biotopes. F o r t.: Pushthrough 24.6.1949, 1 ♀, the holotype (E.P.). B a r b.: Lomond 15.7.1949, 1 ♂ 2 ♀♀ (E.P.), Eddies Cove West 30.7.1949, 1 ♂ (E.P.). G r. B.: Springdale 20.6.1951, 2 ♀♀ (C.L.).

Oreonetides vaginatus Thor. Found at B a r b.: Doctors Hill 29.7.1949, 1 ♂ 2 ♀♀ under stones and among litter above the timber line (E.P.). This boreo-arctic species is known from Labrador, the mountains of New Hampshire and New York, Wyoming, Utah, Western Canada, Alaska, Greenland, the Faroes, the British Isles, Northern Fennoscandia, Siberia, Kamchatka, the Pyrenees, the Alps and the Carpathians (CROSBY 1937, CHAMBERLIN & IVIE 1943, 1947, BRAENDEGAARD 1946, HOLM 1945).

Oreonetides flavescens Crosby. Taken by sifting litter above the highwater line in B u r g.: Grandy Brook 24.6.1949, 1 ♂ 2 ♀♀ (E.P.). The species is described from New York State (CROSBY 1937).

Meioneta sp. (*rurestris* group). Taken by sifting in marshy places. B a r b.: Port Saunders 5.8.1949, 1 ♀ (E.P.), Eddies Cove West 2.8.1949, 1 ♀ (E.P.).

Argyneta cauta Cambr. Among litter in shady places.

S t. G. P.: Spruce Brook 9.7.1949, 1 ♀ (E.P.). B u r g.: Grand Bruit 24.6. 1949, 4 ♀♀ (E.P.). A v a l.: Cape Broyle 8.6.1949, 1 ♂ (E.P.). B a r b.: Doctors Hill (600 ft.) 29.7.1949, 3 ♀♀ (E.P.). W h. B.: Ha Ha Bay (Raleigh) 18.7. 1949, 1 ♀ (C.L.).

In Eastern Canada, Massachusetts, and Michigan (*A. olivacea* of EMERTON, CHICKERING and KASTON) further in Iceland, the British Isles, Fennoscandia and the mountains of Central Europe (BRISTOWE 1939, MILLER 1947, HOLM 1950). In Fennoscandia a northern species.

Argyneta decora Cambr. (?). H u m b e r: Gaff Topsail (1400 ft.) 20.8. 1949, 1 ♀ (E.P.). W h. B.: Cooks Harbour 22.7.1949, 1 ♀ (C.L.). *A. decora* is known from the British Isles, northernmost parts of Fennoscandia and from the mountains of Central Europe (BRISTOWE 1939, MILLER 1947, HOLM 1950)

Centromerus bicolor Bl. This species is found in Newfoundland in the herbaceous vegetation near the ground on the coastal tundra and in a Kalmia bog. B u r g.: Grand Bruit 18.6.1949, 3 ♀♀ (E.P.), A v a l.: Hogans Pond 6.6.1949, 1 ♀ (E.P.). Not previously known from North America. In Europe in the British Isles, the Faroes, Fennoscandia, Central Europe and Russia (BRISTOWE 1939).

Centromerus sylvaticus Bl. In leaf mould in shady places. B u r g.: Grandy Brook 24.6.1949, 1 ♀ (E.P.). B a r b.: Cow Head 10.8.1949, 1 ♀ (E.P.).

Eastern Canada, Massachusetts and New York, in the Old World in the British Isles, Fennoscandia, Central Europe, European and Asiatic Russia to Kamchatka (BRISTOWE 1939, KASTON 1948).

Centromerus persolutus Cambr. A single male sifted from debris in a river shore thicket in B u r g.: Grandy Brook 24.6.1949 (E.P.). Known from Quebec, New England, Michigan and New York (CROSBY & BISHOP 1928a, CHICKERING 1934, CROSBY & ZORSCH 1935).

Centromerus cornupalpis Cambr. One female sifted from litter in a conifer thicket by a rivulet in B u r g.: Grand Bruit 13.6.1949 (E.P.). Known from New England, Michigan and Wyoming (KASTON 1948, LEVI & LEVI 1951).

Centromerus longibulbus Emert. Sifted from leaf mould in shady places. B u r g.: Grandy Brook 24.6.1949, 1 ♀ (E.P.), Recontre West 18.6.1949, 1 ♀ (C.L.). B a r b.: Cow Head 10.8.1949, 1 ♀ (E.P.).

Known from Massachusetts and New York (KASTON 1948).

Centromerus latidens Emert. Among dead leaves, under stones and pieces of wood in various biotopes. Only females in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	6	—	1	3	6	3	1	2

Localities: S t. G. P.: South Branch, B u r g.: Grand Bruit, Burgeo, B a r b.: Cow Head, Daniels Harbour, St. Barbe, St. John Island, W h. B.: Bartletts River, G r d. F.: Millertown Junction, B o n. N.: Gambo.

New England and New York (CROSBY & BISHOP 1928a, KASTON 1948).

Micryphantidae

Sciastes truncatus Emert. Sifted from forest litter. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	—	—	3	—
females	—	—	1	1	—	—	1	8	3

Localities: S t. G. P.: South Branch, B u r g.: Grandy Brook (Burgeo), H u m b e r: Cooks Brook, Corner Brook, Kittys Brook, B a r b.: Cow Head, G r d. F.: Millertown Junction, B o n. N.: Gambo.

Known from Massachusetts and Eastern Canada. (KASTON 1948).

Eulaira concava Emert. Taken by sifting moist moss and litter. B u r g.: Grand Bruit, coastal tundra, 13.6.1949, 1 ♂ (E.P.), Grandy Brook (Burgeo)

24.6.1949, 1 ♂ (E.P.). Known from Quebec, Massachusetts, Vermont, Connecticut and New York (CHAMBERLIN & IVIE 1945).

Eulaira microtarsa Emert. B a r b.: Doctors Hill 29.7.1949, 5 ♀♀ sifted from forest litter (E.P.), St. Barbe 26.7.1949, 1 ♂ 1 ♀ under a stone on the sea shore (E.P.). Known from New Hampshire, New York, Wyoming, Colorado and Utah (CHAMBERLIN & IVIE 1945, LEVI & LEVI 1951).

Diplocentria bidentata Emert. This species is found in moss and debris. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	—	1	—	—
females	—	1	2	—	—	6	5	8	1

Localities: S t. G. P.: Table Mountains, B u r g.: Grandy Brook (Burgeo), Recontre West, H u m b e r : Corner Brook, Gaff Topsail (1400 ft.), B a r b.: Cow Head, Doctors Hill, W h. B.: Cooks Harbour, B o n. N.: Gambo.

Labrador, Quebec, Alberta, Maine, Massachusetts, New Hampshire, Vermont, New York, Michigan, Wyoming, Utah, Colorado, Alaska (CHAMBERLIN & IVIE 1945), in the Old World in Great Britain, Fennoscandia, France, Switzerland and Czechoslovakia. In Northern Fennoscandia *D. bidentata* is one of the commonest spiders in moss and litter and is nearly eurytopic (HOLM 1950). Judging from the samples from Newfoundland it is less abundant there.

Diplocentria corynetes Chamb. & Ivie. One female taken by sifting litter in the uppermost forest zone of Doctors Hill (B a r b.) 29.6.1949 (E.P.). Known previously only from two localities in New York State (CHAMBERLIN & IVIE 1945).

Scironis tarsalis Emert. B a r b.: Stanford River 11.8.1949, 1 ♂ sifted from moss and litter in an Alnus-Abies thicket (E.P.). Known from Massachusetts, Vermont, New York (BISHOP & CROSBY 1938, KASTON 1948).

Scylaceus obtusus Emert. B u r g.: Grandy Brook (Burgeo) 24.6.1949, 1 ♀ taken by sifting leaf mould in a maple grove (E.P.). Known previously from Alberta and Colorado (BISHOP & CROSBY 1938).

Tapinocyba simplex Emert. In leaf mould and litter. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	—	—	3	4
females	—	—	4	1	—	1	1	8	8

Localities: S t. G. P.: South Branch, H u m b e r : Cooks Brook, Corner Brook, Kittys Brook, B a r b.: Cow Head, Doctors Hill, St. Barbe, G r d, F.: Millertown Junction, B o n. N.: Gambo.

Known from Quebec, Maine, New Hampshire, Massachusetts, Vermont, New York (CROSBY & BISHOP 1933, CROSBY & ZORSCH 1935).

Tapinocyba scopulifera Emert. One female taken on the margin of a moor pond in Picea glauca forest in B a r b.: Cow Head 8.7.1949 (E.P.). The species has previously been reported from Massachusetts and New York (CROSBY & BISHOP 1933).

Tapinocyba lindrothi n.sp. One female taken by sifting litter in a conifer forest at the W-slope of Long Range at South Branch (S t. G. P.) 3.7.1949 (E.P.).

Tapinocyba exigua n.sp. A single female found by sifting litter in a birch wood in G r d. F.: Millertown Junction 22. 8.1949 (E.P.).

Dietrichia hesperia Crosby & Bishop. A single male specimen from S t. G. P.: Stephenville 29.10.1947 taken by ROBERT TRAUB. As pointed out on p. 17 the specimen differs in one palpal character from the Californian type material of this species.

Thyreosthenius parasiticus Westr. Sifted from moist litter in shady places. A v a l.: Hogans Pond 3.6.1949, 3 ♀♀ (E.P.). G r d. F.: Norris Arms 23.8.1949, 1 ♀ (E.P.).

In Connecticut, New York, Wisconsin and in the Old World in Iceland, the British Isles, Fennoscandia, France, Central Europe. *(Hormathion limnatum* of KASTON 1948 and LEVI & LEVI 1951, HOLM 1950).

Islandiana alata Emert. B a r b.: Serpentine Mountains 17.7.1949, 3 ♂♂ 1 ♀ under stones at about 2000 ft. on the NE slope of the mountain (E.P.). Daniels Harbour 22.7.1949, 10 ♀♀ under stones and pieces of wood on a sterile sea shore (E.P.).

Known from Arctic Canada, Mountains of New England, Wyoming, Alaska, Swedish Lapland (HOLM 1945, LEVI & LEVI 1951).

Erigone atra Bl. Under stones and among grass on sea shores, river banks and in damp meadows.

S t. G. P.: Table Mountains 29.6.1949, 1 ♀ (E.P.). B u r g.: Port aux Basques 28.6.1949, 1 ♀ (E.P.). H u m b e r: Deer Lake 30.5.1951, 1 ♀ (C.L.). B a r b.: Cow Head 10.8.1949, 2 ♂♂ 2 ♀♀ (C.L.), Port Saunders 5—6.8.1949, 1 ♂ (E.P.), Doctors Brook 31.7.1949, 2 ♂♂ 1 ♀ (E.P.), Flowers Cove 23.7.1949, 1 ♀ (C.L.).

Nova Scotia, Ontario, Saskatchewan, Maine, New Hampshire, Massachusetts, Connecticut, New York, Pennsylvania, Ohio, Alaska, The British Isles, Fennoscandia, Central Europe, European and Asiatic Russia and the Arctic Islands. (CROSBY & BISHOP 1928b, CHAMBERLIN & IVIE 1947, KASTON 1948, HOLM 1950).

Erigone dentigera Cambr. In similar biotopes as the preceeding species, but also in bogs.

F o r t.: Terreceville 14.8.1951, 1 ♂ 1 ♀ (C.L.). B u r i n: Grand Bank 1.8.1951, 1 ♂ (C.L.). H u m b e r: Cooks Brook, Curling 15.8.1949, 1 ♂ (E.P.). B a r b.: Cow Head, St. Pauls' 10.8.1949, 1 ♂ (E.P.), Cow Head Harbour 7.8.1949, 1 ♂ (E.P.). Stanford River 9.8.1949, 1 ♂ (E.P.). W h. B.: Raleigh 17.7.1949, 2 ♀♀ (C.L.). G r. B.: Springdale 20.6.1951, 2 ♂♂ (C.L.). B o n. N. Gambo 26.8.1949, 2 ♂♂ (E.P.).

Known from Ontario, Massachusetts, Connecticut, New York, New Jersey, Illinois, Florida, Montana, Colorado, Alaska (CROSBY & BISHOP 1928, CHAMBERLIN & IVIE 1947).

Erigone blaesa Crosby & Bishop. Found in great number under wrack on sandy beaches, but also under stones and logs in other damp situations.

S t. G. P.: South Branch 2.7.1949, 1 ♂ 1 ♀ (E.P.), Piccadilly 7.7.1949, 1 ♀ (C.L.). B u r g.: Port aux Basques 30.6.1949, 2 ♂♂ 10 ♀♀ (E.P.), Grand Bruit 19.6.1949, 4 ♂♂ 2 ♀♀ (E.P.), Burgeo 20.6.1949, 31 ♂♂ 57 ♀♀ among wrack (E.P.). A v a l.: Trepassey 7.6.1949, 1 ♂ (E.P.). W h. B.: Raleigh 17.7.1949, 2 ♂♂ (C.L.).

Taken in Miquelon (1951 C.L.) and known previously from Labrador, Massachusetts, New York, Rhode Island, New Jersey, Ohio, Minnesota, Missouri, Montana, Colorado, Alaska and the Pacific Coast area of U.S.A. (CROSBY & BISHOP 1928b, CHAMBERLIN & IVIE 1947).

Erigone aletris Crosby & Bishop. In various open damp biotopes under stones and among debris. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	—	—	1	—
females	2	6	4	2	6	2	1	3	2

Localities: S t. G. P.: South Branch, B u r g.: Port aux Basques, F o r t.: Terrenceville, B u r i n: Grand Banks, T r. S.: Come by Chance, A v a l.: Holyrood, St. Johns', H u m b e r: Corner Brook, Deer Lake, B a r b.: Lomond, W h. B.: Bowaters Hare Bay, Great Harbour Deep, G r. B.: Springdale, F o g o: Tilting, T r. N.: Port Rexton.

Known from Maine, Massachusetts and New York (CROSBY & BISHOP 1928b).

Erigone whymperi Cambr. (?). Habitats similar to those of the previous species.

A v a l.: Waterford Bridge 5.6.1949, 1 ♀ (E.P.). H u m b e r: Gaff Topsail 19.8.1949, 1 ♀ (E.P.). B a r b.: Doctors Hill 29.6.1949, 1 ♀ taken above the timber line (E.P.), Flowers Cove 25.7.1949, 1 ♀ (E.P.). W h. B.: Cooks Harbour 16.7.1949, 1 ♀ (C.L.), Bowaters Hare Bay 14.7.1949, 1 ♀ (C.L.).

E. whymperi is known from Akpatok (north of Labrador), Ellesmere Land and Greenland (BRAENDEGAARD 1946).

Erigone ephala Crosby & Bishop. Collected on sandy beaches under heaps of wrack, also taken in other damp situations.

St. G. P.: South Branch 2—3.7.1949, 1 ♂ 2 ♀♀ (E.P.). Burg.: Grand Bruit 19.6.1949, 2 ♀♀ (E.P.), Burgeo 20.6.1949, 1 ♀ (E.P.). Humber: Cooks Brook 15.8.1949, 1 ♀ (E.P.). Barb.: Cow Head 10.8.1949, 1 ♂ (E.P.), Eddies Cove West 28.7.1949, 1 ♀ (E.P.).

Taken in St. Pierre Island (1951 C.L.) and known previously from Maine, Massachusetts and New York (CROSBY & BISHOP 1928b).

Eperigone maculata Banks. Sifted from leaf mould in shady places. St. G. P.: South Branch 3.7.1949, 3 ♀♀ (E.P.). Barb.: Lomond 15.7.1949, 1 ♀ (E.P.).

This species is known from Maine, New Hampshire, Connecticut, New York, Distr. Columbia, Pennsylvania, Virginia, North Carolina, Georgia, Florida, Tennessee, Kentucky, Mississippi, Illinois, Minnesota, Missouri, Arkansas and Kansas (CROSBY & BISHOP 1928b, CHAMBERLIN & IVIE 1944).

Eperigone contorta Emert. Taken in Carex bogs and Picea glauca swamp. Barb.: Cow Head 8.8.1949, 2 ♀♀ (E.P.), Eddies Cove West 2.8.1949, 1 ♀ (E.P.). Grd. F.: Millertown 10.6.1951, 1 ♂ (C.L.).

Known from Massachusetts and New York (CROSBY & BISHOP 1928b).

Eperigone trilobata Emert. Sifted from litter in shady places.

St. G. P.: South Branch 3.7.1949, 1 ♀ (E.P.). Burg.: Cinq Cerf River 16.6.1949, 1 ♀ (E.P.). Fort.: Pass Island 25.6.1949, 1 ♀ (C.L.). Barb.: Woody Point 21.7.1949, 1 ♀ from a biotope influenced by settlements (E.P.). Grd. F.: Millertown Junction 22.8.1949, 1 ♀ from a mixed forest (E.P.).

Known from Quebec, Maine, New Hampshire, Massachusetts, Connecticut, New York, Distr. Columbia, Virginia, Georgia, Illinois, Missouri and British Columbia (CROSBY & BISHOP 1928b).

Collinsia pertinens Cambr. Under stones and heaps of wrack on sea shores. Burg.: Port aux Basques 30.6.1949, 1 ♂ (E.P.). Aval.: Biscay Bay 8.6. 1949, 1 ♀ (E.P.), Cape Broyle 7.6.1949, 1 ♀ (C.L.),

Known previously from Maine (CROSBY & BISHOP 1928b).

Collinsia clypiella Chamb. Taken in a salt marsh and in a flooded moor. Humber: Deer Lake 30.5.1951, 5 ♂♂ 8 ♀♀ (C.L.). Barb.: Cow Head 10.8.1949, 1 ♀ (E.P.)

Known previously from Colorado, Idaho, Utah and Wyoming (CHAMBERLIN 1948).

Collinsia stylifera Chamb. Barb.: Doctors Hill 29.7.1949, 2 ♀♀ found under stones on a mountain heath at 1000 ft. (E.P.).

Known from Alaska, Utah, Oregon, Nevada and California (CHAMBERLIN 1948).

Collinsia palmeni n.sp. One female taken on a river bank at S t. G. P.: South Branch 2.7.1949 (E.P.).

Hilaira herniosa Thor. A single female taken at W h. B.: Raleigh 17.7. 1948 (C.L.). This arctic species is known from Arctic Canada, Siberia, Northern Fennoscandia and from the Alps (HOLM 1945, 50).

Hilaira mentasta Chamb. & Ivie. H u m b e r : Gaff Topsail 19.8.1949, 1 ♂ among litter at the margin of a moor pond (E.P.). B a r b.: Lomond 14.7.1949, 1 ♀ sifted from forest litter (E.P.). The species is previously known only from Alaska (CHAMBERLIN & IVIE 1947).

Hilaira algida n.sp. Sifted from forest litter beside rivulets. B u r g.: Grand Bruit 13.6.1949, 2 ♀♀ (E.P.). B a r b.: Lomond 15.7.1949, 1 ♀ (E.P.).

Hilaira dubia n.sp. Under stones in damp situations, also sifted from forest litter.

B u r g.: Rose Blanch 27.6.1949, 1 ♀ (E.P.), Grandy Brook (Burgeo) 26.6. 1949, 2 ♀♀ (E.P.), H u m b e r : Kittys Brook 18.8.1949, 1 ♀ (E.P.), B a r b.: Stanford River 11.8.1949, 1 ♀ (E.P.), St. Barbe 26.7.1949, 1 ♀ (E.P.), G r d. F.: Victoria Lake 11—13.6.1951, 1 ♀ (C.L.).

Hilaira aquilonia n.sp. Sifted from moss in an Alnus-Abies thicket. B a r b.: Stanford River 11.8.1949, 2 ♀♀ (E.P.).

Spirembolus oreinoides Chamb. (?). A single female taken at H u m b e r : Kittys Brook 18.8.1949 by sifting thick layers of litter in an Alnus-Populus-Salix thicket (E.P.).

S. oreinoides has previously been reported only from Mt. Palomar in California (CHAMBERLIN 1948).

Soudinus canaliculatus Emert. Most specimens were taken by sifting moss and litter in forests. Only females in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	1	5	3	7	—	1	2	—

Localities: S t. G. P.: Table Mountain (at 1500 ft.), South Branch, B u r g.: Port aux Basques, Grandy Brook (Burgeo), Recontre West, H u m b e r : Gaff Topsail, B a r b.: Lomond, Stanford River.

Known from Saskatchewan and Colorado (CROSBY & BISHOP 1936).

Tunagyna debilis Banks. One male specimen sifted from roots of dune plants on the sand dunes at Burgeo (B u r g.) 26.6.1949 (E.P.).

This species is known from Massachusetts and Michigan (CHICKERING 1935, KASTON 1948).

Sisicottus montanus Emert. Under stones and among litter in various biotopes. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	1	—	1	—	—	—	—	5	—
females	3	—	—	—	1	8	—	16	—

Localities: A v a l.: Hogans Pond, H u m b e r : Gaff Topsail (at 1400 ft.), B a r b.: Doctors Hill (above the timber line), W h. B.: Cooks Harbour, Ha Ha Bay (Raleigh).

Labrador, Quebec, Ontario, Saskatchewan, Alberta, British Columbia, Maine, New Hampshire, Massachusetts, Vermont, New York, Utah, Colorado, Wyoming, Washington and Alaska. A mountain species in the southern parts of its range (BISHOP & CROSBY 1938). The Newfoundland specimens belong to the nominate race of this species.

Trachynella nudipalpis Westr. In forest litter in shady places, maple groves, etc. The material contains only females:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	5	1	2	1	3	1	6	1

Localities: S t. G. P.: South Branch, B u r g.: Grand Bruit, Grandy Brook (Burgeo), Recontre West, H u m b e r : Cooks Brook, Corner Brook, Gaff Topsail (at. 1400 ft.), B a r b.: Lomond, Stanford River, Doctors Hill, B o n. N.: Gambo.

Not known before from North America. In Iceland, Faroes, the British Isles, France, Fennoscandia, Central and Eastern Europe (BRISTOWE 1939).

Walckenaera vigilax Bl. Taken by sifting debris on salt marshes in the tidal zone. B a r b.: St. Pauls at Cow Head 10.9.1949, 2 ♀♀ (C.L.), St. John Island 3.8.1949, 2 ♀♀ (E.P.).

Known from New Hampshire, Connecticut, New York, Virginia, Illinois, Missouri, Ohio and Washington and in Europe from Great Britain, France, Finland, Central and Eastern European countries (CROSBY & BISHOP 1931, BRISTOWE 1939).

Cornicularia minuta Emert. Among leaf mould in maple groves. H u m b e r: Corner Brook 16.8.1949, 1 ♀ (E.P.). B a r b.: Lomond 15.7.1949, 2 ♀♀ (E.P.), Glenbournie 18.7.1949, 1 ♀ (E.P.).

Known from New Hampshire, Connecticut, New York, New Jersey Minnesota and Missouri (CROSBY & BISHOP 1931).

Cornicularia cuspidata Bl. Sifted from leaf mould and debris in shady. places.

B u r g.: Port aux Basques 1.7.1949, 1 ♀ (E.P.), Grandy Brook (Burgeo) 24.6.1949, 1 ♀ (E.P.). B a r b.: Doctors Hill 29.7.1949, 1 ♀ (E.P.). W h. B.: Bartletts River 20.7.1949, 2 ♀♀ (C.L.).

Known from Mt. Marey in New York State (*C. brevicula* Crosby & Bishop) from Iceland, the British Isles, France, Northern and Central Europe and from Kamchatka (BRISTOWE 1939).

Cornicularia karpinskii Cambr. H u m b e r : Gaff Topsail 20. 8. 1949, 1 ♀ from a Picea mariana swamp (E.P.), W h. B.: Ha Ha Bay (Raleigh) 18.7.1949, 2 ♀♀ among leaf mould on a rock close to the shore (C.L.).

This arctic species is known from Labrador, Greenland, Iceland, Northern Fennoscandia, Spitzbergen, Switzerland, Siberia and Kamchatka (BRAENDEGAARD 1946).

Cornicularia unicornis Cambr. Sifted from leaf mould in shady places. B u r g.: Cinq Cerf River 16.6.1949, 1 ♀ (E.P.). H u m b e r : Deer Lake 30.5. 1951, 5 ♀♀ (C.L.). B a r b.: Cow Head 8.8.1949 1 ♀ (E.P.).

Not recorded before from North America. Known from the British Isles, France, Northern and Central Europe and from European Russia (BRISTOWE 1939).

Cornicularia auranticeps Emert. One female from H u m b e r : Gaff Topsail 20.8.1949, sifted from litter in a Picea mariana swamp at 1400 ft. (E.P.). Known from Massachusetts and New York (CROSBY & BISHOP 1931).

Tigellinus tricornis Emert. (?) One female, probably this species, from A v a l.: Hogans Pond 6.6.1949 from a peat bog (E.P.). Known from New Hampshire (CROSBY & BISHOP 1931).

Entelecara abrupta Emert. Sifted from moist forest litter in shady places. B u r g.: Port aux Basques 1.7.1949, 1 ♀ (E.P.), Grandy Brook (Burgeo) 24.6.1949, 2 ♂♂ 3 ♀♀ (E.P.). H u m b e r : Corner Brook 11.7.1949, 1 ♂ (E.P.).

Known from Massachusetts and New York (CROSBY & BISHOP 1933).

Entelecara exigua Banks, F o r t. Pushthrough 24.6.1949, 3 ♀♀ from the sphagnumetum of a bog pond (C.L.). Known from Connecticut and New York (*Mythoplastoides exiguus* of CROSBY & BISHOP 1933).

Minyriolus castaneus Emert. Found under stones and sifted from litter in shady places; in several samples from maple groves. Seasonal distribution of the adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	1	—	—	—
females	2	—	1	1	2	2	—	—	3

Localities: S t. G. P.: Spruce Brook, B u r g.: Grandy Brook (Burgeo), A v a l.: Waterford Bridge, Hogans Pond, B a r b.: Lomond, Doctors Hill, St. Barbe, W h. B.: Great Harbour Deap, B o n. N.: Gambo.

Known from New Hampshire, Massachusetts, New York and Wisconsin (CROSBY & BISHOP 1933, LEVI 1951).

Eridantes erigonoides Emert. One female from S t. G. P.: Stephenville Crossings, Harrys River 6.7.1949, taken by sweeping bushes in a Populus-Salix-Alnus thicket in the river valley (E.P.).

This species is known from Ontario, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Illinois, Maryland, Ohio, Distr. Columbia, Virginia, Tennessee, Minnesota, Iowa, Missouri and Kansas (CROSBY & BISHOP 1933).

Diplocephalus cuneatus Emert. Collected by sifting forest litter shady places, maple groves, etc. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	1	—	—	—	—	—	—	2
females	—	—	2	2	2	—	—	6	5

Localities: S t. G. P.: Spruce Brook, B u r g.: Cinq Cerf River, Grandy Brook (Burgeo), H u m b e r : Cooks Brook, Corner Brook, Kittys Brook, W h. B.: Bartletts River, G r d. F.: Millertown Junction.

Known from Quebec, Ontario, New Hampshire and New York (CROSBY & BISHOP 1933).

Diplocephalus cristatus Bl. Among debris, under stones and pieces of wood. Most samples containing this species are from biotopes strongly influenced by settlements. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	2	3	—	—	2	—	—	—	—
females	7	4	—	1	7	—	—	3	1

Localities: S t. G. P.: Piccadilly, Spruce Brook, B u r g.: Rose Blanch, Grand Bruit, Cinq Cerf River, Ramea Island, A v a l.: Holyrood, Waterford Bridge, St. John's, H u m b e r : Corner Brook, Deer Lake, B a r b.: Woody Point, Lomond.

Known from Ontario, Massachusetts, New York and Wisconsin (KASTON 1948, LEVI 1951). In the Old World: in most countries of Europe, in Asiatic Russia eastward to Kamchatka, further in North Africa and New Zealand (BRISTOWE 1939).

Dismodicus bifrons decemoculatus Emert. Sifted from litter in various biotopes, also shaken from bushes. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	5	—	—	—	—	—	—	—	—
females	8	3	1	3	4	1	2	1	—

Localities: S t. G. P.: Table Mountains, South Branch, Spruce Brook, B u r g.: Grandy Brook (Burgeo), Recontre West, A v a l.: Holyrood, Waterford Bridge (8 specimens all dark in colour), H u m b e r: Corner Brook, Deer Lake, B a r b.: Lomond, Cow Head, St. Barbe, W h. B.: Griquet, Fourché Harbour.

Canada, Northern New England, New York, Alaska (*modicus* Chamb. & Ivie), Greenland (*variegatus* Jacks.). The nominate subspecies is known from Iceland, the British Isles, North and Central Europe, European and Asiatic Russia. (CROSBY & BISHOP 1933, BRISTOWE 1939).

Dismodicus alticeps Chamb. & Ivie. One male from B u r g.: Recontre West 17.6.1949, in a sample collected in the bottom of Big Bay and on a treeless heath (C.L.). Known previously only from Alaska (CHAMBERLIN & IVIE 1947).

Hypomma marxi Keys. S t. G. P.: South Branch 2.7.1949, 1 ♀ (E.P.). B a r b.: Cow Head 11.8.1949, 1 ♀ (C.L.). G r d. F.: Victoria Lake 11.6.1951, 2 ♀♀ (C.L.).

This species is known from Lake Superior, Massachusetts, New York and Washington (CROSBY & BISHOP 1933).

Hybocoptus denticulatus Emert. One female from W h. B.: Ha Ha Bay (Raleigh) 18.7.1949, found among moss and litter on a rock near the shore (C.L.). Known from Labrador, Alberta and Utah (CROSBY & BISHOP 1933) (see also p. 33 in this paper).

Zornella cultrigera L. Koch. One female from a Picea mariana swamp at 1400 ft. on Gaff Topsail Mountain (H u m b e r) 20.8.1949 (E.P.). Known from Canada, New England, Utah, Alaska, Vancouver Island, Fennoscandia and Siberia (CROSBY & BISHOP 1933, HOLM 1950).

Oedothorax montiferus Emert. Under stones and among litter in various biotopes. Only females in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	2	—	9	3	3	—	—	—

Localities: S t. G. P.: South Branch, Piccadilly, B u r g.: Grand Bruit, Cinq Cerf River, B a r b.: Serpentine Mountains (2000 ft.), Glenbournie, Flowers Cove, W h. B.: Raleigh.

Known from New England, New York and Michigan (CROSBY & BISHOP 1928a, CHICKERING 1935, KASTON 1948).

Grammonota pictilis Cambr. S t. G. P.: South Branch 3.7.1949, 1 ♀ (E.P.), Spruce Brook 8—9.7.1949, 3 ♀♀ shaken down from bushes near the river (E.P.). G r d. F.: Victoria Lake 13.6.1951, 1 ♀ (C.L.).

The species is known from South Labrador, Nova Scotia, Quebec, Ontario,

Manitoba, Maine, Massachusetts, New York, South Dakota and Wyoming (BISHOP & CROSBY 1932, LEVI & LEVI 1951).

Grammonota gigas Banks. Taken in various biotopes: on the coastal tundra (Kalmia-Ledum-Sarracenia vegetation), on a river bank, in a Picea mariana swamp, etc.

B u r g.: Grand Bruit 14.6.1949 1 ♀ (E.P.), Cinq Cerf River 16.6.1949, 1 ♀ (E.P.), Grandy Brook (Burgeo) 24.6.1949, 1 ♀ (E.P.). H u m b e r: Gaff Topsail 20.8.1949, 2 ♀♀ (E.P. & C.L.). B o n. N.: Gambo 25.8.1949, 1 ♀ (E.P.).

Known from Quebec, New Hampshire, Massachusetts, New York and Iowa (BISHOP & CROSBY 1932, CROSBY & ZORSCH 1935).

Grammonota maritima Emert. One female from W h. B.: Bartletts River 20.7.1949, sifted from debris by a partly dry rivulet (C.L.). This species is known from Eastern Canada (BISHOP & CROSBY 1932).

Souessa spinifera Cambr. Sifted from forest litter in shady places. Only females in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females	—	—	2	—	—	1	2	4	1

Localities: B u r g.: Grandy Brook (Burgeo), B a r b.: Cow Head, Stanford River, St. Barbe, B o n. N.: Gambo.

Known from Massachusetts, New Jersey and Iowa (CROSBY & BISHOP 1936).

Trichopterna mengei Simon. One female from W h. B.: Cooks Harbour 22.7.1949, sifted from debris on the slope of a hill (C.L.). Known from Ontario, Massachusetts and New York (*Pelecopsis excavatum* of CROSBY & BISHOP 1931) and in the Old World from the British Isles, France, Sweden and Finland (BRISTOWE 1939, HOLM 1945).

Ceraticelus similis Banks. One female taken in B a r b.: Cow Head 10.8 1949 by sifting litter from a saltmarsh (C.L.). Known from New England, New York, Distr. Columbia, Pennsylvania, Ohio, Georgia (CROSBY & BISHOP 1925, CHAMBERLIN & IVIE 1944).

Ceraticelus laetabilis Cambr. According to CROSBY & BISHOP (1925) this species is found almost exclusively by sifting in moderately dry woods. The present material has been sifted from forest litter, but no exact account about the humidity could be given. All the specimens are taken in August:

	August		
	1—10	11—20	21—31
males	—	1	6
females	—	3	11

Localities: H u m b e r: Corner Brook, Kittys Brook. G r d. F.: Millertown Junction, B o n. N.: Gambo.

This species is previously recorded from Newfoundland from S t. G. P.: Stephenville Crossing and Spruce Brook by Emerton (CROSBY & BISHOP 1925). Further finds of *C. laetabilis* are from Quebec, Ontario, New England, New York, Pennsylvania, North Carolina, Missouri, Minnesota, South Dakota, Manitoba and Alberta (CROSBY & BISHOP op.c.).

Ceraticelus fissiceps Cambr. Sifted from forest litter (in nearly all the samples from maple groves) but also taken by sweeping vegetation in various biotopes. Seasonal distribution of the adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	1	—	1	—	—	2	2	1
females	1	3	1	—	1	—	9	2	3

Localities: S t. G. P.: Spruce Brook, B u r g.: Grandy Brook (Burgeo), A v a l.: Holyrood, H u m b e r : Corner Brook, B a r b.: Glenbournie, Cow Head, G r d. F.: Millertown Junction, B o n. N.: Gambo.

This is a common species in Eastern Canada, New England and New York and occurs southward as far as North Carolina and westward as far as Nebraska (CROSBY & BISHOP op.c., CHICKERING 1933).

Ceraticelus atriceps Cambr. Sifted from forest litter and beaten from bushes in a river valley. S t. G. P.: Spruce Brook 8—9. 7.1949, 1 ♀ (E.P.), B u r g.: Grandy Brook (Burgeo) 24.6.1949, 1 ♀ (E.P.).

Known from Quebec, Ontario, New England, New York, Pennsylvania, Distr. Columbia, Virginia, North Carolina, Missouri and Ohio (CROSBY & BISHOP 1925).

Ceratinella brunnea Emert. Sifted from moss and litter in shady places (thickets and forests of various kinds). Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	1	—	—	—	1	4	—	3
females	—	2	1	1	—	5	2	1	2

Localities: S t. G. P.: South Branch, B u r g.: Cinq Cerf River, Grandy Brook (Burgeo), Recontre West, A v a l.: Holyrood, H u m b e r : Gaff Topsail (see p. 45), B a r b.: Cow Head, Doctors Hill (below the timber line), Flowers Cove, G r d. F.: Millertown Junction, B o n. N.: Gambo.

Known from Labrador, Quebec, Ontario, New England, New York, North Dakota and Wyoming (CROSBY & BISHOP op.c., CHAMBERLIN 1948).

Maso sundevalli Westr. Among forest litter. H u m b e r : Gaff Topsail 20.8.1949, 1 ♀ (E.P.), B a r b.: Cow Head 10.8.1949, 1 ♀ (E.P.), G r d. F.: Millertown Junction 22.8.1949, 2 ♀♀ (E.P.), B o n. N.: Gambo 25.6.1949, 1 ♀ (E.P.).

Known from Eastern Canada, the New England states and Alaska (CHAMBERLIN & IVIE 1947). In the Old World: The British Isles, Fennoscandia, France, Central and Southern Europe, European and Asiatic Russia eastward to Kamchatka (BRISTOWE 1939). One of the commonest Micryphantids in Fennoscandia.

Porrhomma gertschi n.sp. H u m b e r : Deer Lake 30.5.1951, 3 ♂♂ 5 ♀♀ (C.L.).

Araneidae

Meta menardi Latreille, taken in S t. G. P.: South Branch 3—4.7.1949, 1 ♀ 2 juvv. in the ravines of Codroy River (E.P.).

Known from New England and Indiana, and in the Old World from the British Isles, most countries of the European Continent (hitherto not from Finland), Algeria and Madeira (BRISTOWE 1939, KASTON 1948).

Metepeira palustris Chamberlin & Ivie. One female swept from the herbaceous vegetation of a wet meadow at H u m b e r : Kittys Brook 18.8.1949 (E.P.). Known from Nova Scotia, Maine Wisconsin and North Dakota (CHAMBERLIN & IVIE 1942, LEVI 1951).

Cyclosa conica Pallas. Shaken or swept from bushes or the lower branches of trees (preferably coniferous).

S t. G. P.: South Branch 3.7.1949, 1 juv. (E.P.). H u m b e r : Corner Brook 16.8.1949, 2 juvv. (E.P.), Steady Brook 10.7.1949, 2 ♂♂ (E.P.). B a r b.: Glenbournie 18.7.1949, 2 juvv. (E.P.), Cow Head 10.8.1949, 1 juv. (E.P.), Eddies Cove West 30.7.1949, 1 ♀ (E.P.).

Widely distributed in the Holarctic Region: Newfoundland, Canada, Alaska, North and Central U.S.A., almost the whole of Europe, Asiatic Russia and Algeria. (BRISTOWE 1939, CHAMBERLIN & IVIE 1947).

Singa variabilis Emerton. In the herbaceous vegetation of various biotopes: coniferous forest, Sphagnum bog, Kalmia moor. All specimens in the material are immature. B a r b.: Cow Head 10.8.1949, 2 juvv. (E.P.), Eddies Cove West 2.8.1949, 2 juvv. (E.P.). G r d. F.: Millertown Junction 21.8.1949, 1 juv. (E.P.).

Eastern and Western North America (CHAMBERLIN & IVIE 1947).

Zygiella montana C. L. Koch. One female found under loose bark of Picea in B a r b.: Doctors Brook 31.7.1949 (E.P.).

Known from Nova Scotia, the northern states of New England, Michigan, Montana and Alaska, in the Old World in the mountains of France and Central Europe (WIEHLE 1931, GERTSCH & JELLISON 1938, CHAMBERLIN & IVIE 1947).

Araneus diadematus Clerck. Not in the material of 1949 and 1951, but mentioned by WIEHLE (1931 p. 75) from Newfoundland. Found in Massachusetts, Rhode Island and Greenland. Widely distributed in the Old World:

known from most European countries (also in Iceland), further in Asiatic Russia eastward to Kamchatka (WIEHLE 1931, BRISTOWE 1939, KASTON 1948).

Araneus solitarius Emerton. One male from B o n. N.: Gander 1.9.1949, swept from bushes at Gander Lake (E.P.). Known from New England and New York (CROSBY & BISHOP 1928, KASTON 1948).

Araneus corticarius Emerton. Found under loose bark and among litter in conifer forest.

A v a l.: Waterford Bridge 5.6.1949, 1 subad, ♀ (E.P.). B a r b.: Eddies Cove West 30.7.1949, 1 ♀ (E.P.). B o n. N.: Gambo 25.8.1949, 1 ♀ (E.P.).

Eastern Canada, New England, Michigan, Wisconsin and Alaska (CHAMBERLIN & IVIE 1947, LEVI 1951).

Araneus cornutus Clerck. The ecology of this common spider is so well known that it requires no further comment (see for ex. KASTON 1948 p. 255). Seasonal distribution of the Newfoundland material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	1	—	—	—	1	—	1
females, ad.	—	1	—	—	—	2	—	7	1
immatures	1	—	2	7	1	4	1	4	2

Maturity is attained late in the summer. Hibernation as adults or in young instars.

Localities: S t. G. P.: St. Fintans, Spruce Brook, B u r g.: Port aux Basques, Grandy Brook, F o r t.: Terreceville, A v a l.: Holyrood, H u m b e r: Gaff Topsail. B a r b.: Serpentine Mountains, Cow Head, Port au Choix, Eddies Cove West. G r d. F.: Millertown Junction, Victoria Lake, Grand Falls, Glenwood. T w i l l.: Twillinggate, F o g o: Tilting and Seldom, B o n. N.: Gander, Gambo, B o n.: Terra Nova, T r. N.: Port Rexton.

In most parts of Canada, U.S.A., Europe and Northern Asia. One of the commonest Araneids in Fennoscandia.

Araneus patagiatus Clerck. Only in two samples of the material: A v a l.: Waterford Bridge 5.6.1949, 1 juv. from a moist forest meadow (E.P.). B a r b.: Doctors Hill 31.7.1949, 1 ♀ swept from the vegetation above the timber line (C.L.).

Mentioned from Newfoundland by WIEHLE (1931). In Canada the most common round-web spider (EMERTON 1919), but in New England less common than *cornuta* (KASTON 1948). Distribution in the Holarctic Region almost the same as for *E. cornuta*.

Araneus scolopetarius Cleck. Only in one sample: H u m b e r: Howley 11.7.1949, 1 ♂ ♀ juv., culture-influenced biotope (C.L.).

This species is widely distributed in North America and Europe, but appears to be more southern than the two preceeding species. Least common of the three in New England. Not taken in Finland.

Araneus trifolium Hentz. This spider seems to prefer the vegetation in more or less marshy places (KASTON 1948 p. 258). Also in culture-influenced biotopes. Seasonal distribution of the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	—	—	1	—	1	—	—
females, ad.	—	—	—	—	—	—	—	1	2
immatures	—	5	—	1	—	—	1	—	—

The life cycle appears to be the same in Newfoundland and New England (see KASTON loc. cit.).

Localities: B u r g.: Recontre West, T r. S.: Come by Chance, S t. G. P.: Spruce Brook, H u m b e r : Corner Brook, B a r b.: Lomond, Cow Head.

A widely distributed and common nearctic species: Canada, New England and southward to Alabama, Michigan, the Rocky Mountains, the Pacific Coast area, and Alaska (CHAMBERLIN & IVIE 1947).

Araneus displicatus Henz. Collected by sweeping bushes and tall grass. As typical biotopes for this species ARCHER (1940 p. 12) mentions ravine woods and forest slopes, biotopes considered as »transition from mesic to xeric communities». At least 6 of the 10 samples from Newfoundland containing this species are from biotopes of the above mentioned type. No males in the material.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females, ad.	—	—	1	2	3	1	—	—	1
immatures	1	1	—	3	—	—	—	—	1

Localities: A v a l.: Signal Hills (St. Johns), S t. G. P.: South Branch, Spruce Brook, H u m b e r : Steady Brook, Kittys Brook, B a r b.: Lomond, Killed Evil Mountain, Eddies Cove West, W h. B.: Bartletts River, G r d. F.: Millertown, B o n. N.: Gander.

Canada, New England southward to Alabama and Georgia, Wyoming, Alaska. In the Old World in England, Holland, Germany, Sweden, Southern Russia and the Alps (WIEHLE 1931, ARCHER 1940, CHAMBERLIN & IVIE 1944, 1947, DE JONG 1949, LEVI & LEVI 1951, MILLIDGE & LOCKET 1952). A rare species in Western and Northern Europe, but common in North America.

Theridiosomatidae

Theridiosoma radiosum Emerton. Shaken from bushes and sifted from litter. As pointed out by KASTON (1948) it prefers damp and shady biotopes. In Alabama this species is characteristic of flood-plain woods (ARCHER 1940). S t. G. P.: South Branch 3.7.1949, 2 ♀♀ (E.P.), Spruce Brook 8—9.7.1949, 1 ♀ (E.P.).

One of the southern elements of the spider fauna of Newfoundland. Occurs on the mainland in New England and southward to Georgia (see also p. 36).

Tetragnathidae

Pachygnatha brevis Keyserling. In damp situations, among litter on river banks, in caricetum of moor ponds.

	May	June			July			August		
	30—31	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	5	—	—	—	—	1	—	—	—	3
females, ad.	6	—	1	—	5	—	—	—	2	1
immatures	—	—	3	—	—	—	—	—	8	5

Localities: B u r g.: Cinq Cerf River, S t. G. P.: South Branch, St. Fintans, T r. S.: Come by Chance, H u m b e r : Deer Lake, W h. B.: Hampden, G r d. F.: Victoria Lake, B a r b.: Cow Head.

Known from Southeastern Canada and Northeastern U.S.A.

Tetragnatha laboriosa Hentz. Collected by sweeping tall grass in river valleys and other humid biotopes.

Localities: B u r g.: Grand Bruit 16. 6. 1949, 1 juv. (E.P.), Recontre West 17—19. 6. 1949, 13 ♂♂ 6 ♀♀ (C.L.). S t. G. P.: South Branch 3.7.1949, 1 juv. (E.P.), Table Mountains 29.6.1949, 1 ♀ (E.P.), H u m b e r : Kittys Brook 18.8.1949, 1 ♂ (E.P.). B a r b.: Stanford River 11.8.1949, 2 ♀♀ (E.P.).

Known from Nova Scotia, Ontario, the Rocky Mountains and nearly all states of U.S.A., east of them, Alaska, California, Mexico, Panama and Porto Rico (SEELEY 1928, CHAMBERLIN & IVIE 1947).

Tetragnatha extensa Linné. Collected by sweeping tall grass and bushes in humid biotopes, border of moor ponds etc.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	9	6	1	1	1	—	—
females, ad.	—	—	11	6	2	1	1	—	—
immatures	9	3	10	2	1	—	1	7	3

Maturity is obviously attained in the end of June.

Localities: B u r g.: Burgeo, Grandy Brook, Recontre West, F o r t.:

Pushthrough, S t. G. P.: Table Mountains South Branch, St. Fintans, A v a l: Waterford Bridge, Hogans Pond, H u m b e r: Steady Brook, Corner Brook, Kittys Brook, B a r b.: Lomond, Cow Head, Port au Choix, Eddies Cove West, St. Barbe, G r d. F.: Badger Victoria Lake, Millertown, F o g o: Seldom.

In SEELEYS monograph on *Tetragnatha* (1928) *T. extensa* has not been separated from *T. versicolor* Walck. and many of the records given concern the latter species. CHAMBERLIN & IVIE (1947) list both species from Alaska and mention *T. extensa* as common to Alaska, Eastern and Western Canada, the Rocky Mountains and New England. KASTON (1948) on the contrary does not list at all this species from New England. SCHENKEL (1950) states that he has not been able to separate males of *extensa* and *versicolor* but mentions some minor difference in the female chelicera. *T. extensa* is further known from Greenland, the whole of Europe, Madeira, the Azores, North Africa, Siberia, Irak, Armenia, Japan, China and New Zealand.

Tetragnatha elongata Walckenaer. In vegetation near water.

Localities: S t. G. P.: South Branch 3.7.1949, 1 ♀ (E.P.), St. Fintans 3—4.7.1949, 2 juvv. (E.P.), Stephenville Crossings 6.7.1949, 1 ♂ 2 juvv. (E.P.), Spruce Brook 8—9.7.1949, 1 ♂ 1 ♀ (E.P.), H u m b e r: Steady Brook 10.7.1949, 4 juvv. (E.P.), Deer Lake 18.8.1949, 1 ♀ (C.L.). B a r b.: Stanford River 11.8.1949, 1 juv. (E.P.). G r d. F.: Lewisporte 26.6.1951, 1 ♀ (C.L.).

Known from Ontario and from most parts of U.S.A. (not in Alaska), Mexico to South America (SEELEY, 1928).

Tetragnatha vermiformis Emerton (?). One immature specimen taken. B o n. N.: Gambo 25.8.1949, in the herbaceos vegetation of an Abies-Picea-Acer-Alnus thicket (E.P.). *T. vermiformis* is known from Ontario, Massachusetts, Connecticut, New York, Michigan, Wisconsin and Nebraska (SEELEY 1928, CHICKERING & BACORN 1933, KASTON 1948, LEVI 1951).

Tetragnatha caudata Emerton. One immature specimen from S t. G. P.: St. Fintans 3.7.1949, taken in a Carex bog (E.P.). Known from South Manitoba, Saskatchewan and from Eastern U.S.A.: New England — Florida (SEELEY 1928).

Mimetidae

Ero canionis Chamberlin & Ivie. One female taken in H u m b e r: Deer Lake 3.6.1951 (C.L.). Reported by KASTON (1948) from Connecticut.

Agelenidae

Coras montanus Emerton. Most specimens found under stones and pieces of wood on grassy soil (culture-influenced biotopes) and on more barren ground on open shores, some specimens are found under loose bark of dead trees and a single juv. by beating bushes.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	1	1	—	—	—	—	—	—	—
females, ad.	2	5	2	3	1	—	—	1	2
immatures	2	3	1	2	1	2	3	1	—

Maturity is obviously attained in August, the adults hibernate and the females live to the middle of July.

Localities: B u r g.: Grand Bruit, Cinq Cerf River, Recontre West, F o r t.: Pushthrough, Gaultois, A v a l.: Brigus Junction, Holyrood, Spaniards Bay, Waterford Bridge, Cape Broyle, S t. G. P.: South Branch, Piccadilly, H u m b e r : Corner Brook, Steady Brook, Kittys Brook, B a r b.: Woody Point, Lomond, Cove Head, Doctors Brook, W h. B.: Paquet, G r d. F.: Red Indian Lake, Norris Arms, Gander Airport, B o n. N.: Gambo, T r. N.: Shoal Harbour.

Listed by CHICKERING (1933) from Newfoundland. Further known from Ontario, the Lake Superior region, Connecticut and New York (CHICKERING op.c., KASTON 1948).

Agelenopsis utahana Chamberlin & Ivie. This species is taken by sweeping herbaceous vegetation in various biotopes and also found among debris and pieces of wood in places strongly influenced by man.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	—	—	1	—	—	1	2
females, ad.	—	—	—	—	—	3	—	2	4
immatures	4	2	—	2	4	—	—	3	1

Maturity is attained in the second half of July or later in the summer.

Localities: S t. G. P.: South Branch, Stephenville Crossings, B u r g.: Grand Bruit, T r. S.: Come by Chance, A v a l.: Hogans Pond, Cape Broyle, H u m b e r : Corner Brook (in the town), Cooks Brook, Deer Lake, B a r b.: Lomond, Kittys Brook, Doctors Hill (above the timber line), St. Barbe, W h. B.: Bartletts River, G r d. F.: Victoria Lake, Norris Arms, Lewisporte, Glenwood, B o n. N.: Gander Airport, Gambo, T r. N.: Shoal Harbour.

Known from New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, N. Carolina, Manitoba, Colorado, Utah, Idaho, Montana, Wyoming, Washington and Alaska (CHAMBERLIN 1941, 1947, LEVI & LEVI 1951).

Cryphoeca montana Emerton. This species was taken by sifting litter in forests and in shady brook valleys. The female adults at least are found throughout the summer.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	1	1	—	—	1	—	—
females, ad.	—	5	2	19	3	2	1	7	2
immatures	—	2	—	7	1	1	—	2	1

Localities: S t. G. P.: Table Mountains, South Branch, Spruce Brook, B u r g.: Grand Bruit, Grandy Brook, A v a l.: Waterford Bridge, H u m b e r : Corner Brook, Cooks Brook, Kittys Brook, B a r b.: Lomond, Woody Point, Glenbournie, Cow Head, Eddies Cove West, B o n. N.: Gambo.

Known from Quebec, Northern New England, New York and Connecticut (EMERTON 1909, CROSBY & ZORSCH 1935, KASTON 1948).

Hahniidae

Hahnia cinerea Emerton. Only in two samples in the material: G r d. F.: Millertown junction 22.8.1949 1 ♂ 4 ♀♀ 2 juvv. sifted from leaf mould in birch forest: (E.P.). B o n. N.: Gambo 5 ♂♂, 32 ♀♀, sifted from litter in forest, Abies, Picea, Alnus, Acer, Betula) (E.P.).

Known from Quebec, Ontario, Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Virginia, North Carolina, Michigan, Oklahoma, Colorado, Utah, Arizona, Florida (ssp. *seminola* Gertsch), and Alaska (GERTSCH 1934 b).

Artistea brunnea Emerton. Among moist moss in shady thickets, on moors (in Sphagnum).

Localities: B u r g.: Grandy Brook 24.6.1949 4 ♀♀ (E.P.), H u m b e r : Gaff Topsail 19.8.1949 1 ♀ (E.P.), B o n. N.: Gambo 25.8.1949, 2 ♂♂ 1 ♀ (E.P.).

Known from Maine, New Hampshire, New York, Minnesota and Alaska (GERTSCH 1934 b).

Neoantistea agilis Keyserling. Found under stones and logs in various biotopes.

S t. G. P.: Piccadilly 7.7.1949 1 ♂ 1 ♀ (E.P.), B u r g.: Grand Bruit 11.6. 1949 2 ♀♀ (E.P.), H u m b e r : Deer Lake 18.8.1949 1 ♀ (C.L.), B a r b.: Woody Point 17.7.1949 3 ♀♀ 1 juv. (E.P.), Eddies Cove West 28.7. 1949 1 ♂ 1 juv. (E.P.). — Some immature specimens from Cinq Cerf River and from the Serpentine Mountains might probably belong to this species.

N. agilis is previously known from Newfoundland (GERTSCH 1934 b) and further from Lake Winnipegosis in Canada, Maine, Vermont, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Virginia, Illinois, North Carolina, Kentucky, Ohio, Florida, Texas and New Mexico.

Neoantistea riparia ssp. *radula* Emerton. Obviously a common spider in

Newfoundland and occurring like the preceeding species, in highly varied biotopes (forests, brook valleys, bogs, open marshes, turf ground, sandy shores). Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	1	—	3	—	3	1	2
females	1	6	15	8	7	1	—	2	20

Localities: S t. G. P.: Table Mountains, South Branch, B u r g.: Port aux Basques, Grand Bruit, Recontre West, T r. S.: Come by Chance, H u m b e r: Steady Brook, Corner Brook, B a r b.: Lomond, Woody Point, Cow Head, Eddies Cove West, W h. B.: Pacquet, G r d. F.: Millertown Junction, Victoria Lake, B o n. N.: Gander, Gambo. Some immature specimens from Cooks Brook, Kittys Brook, Daniels Harbour, Raleigh and Bartletts River might belong here.

N. r. radula is known from Southern Labrador, Ontario, Lake Winnipegosis, James Bay (latitude 51° N.), Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Virginia, North Carolina, Tennessee, Illinois, Michigan. The nominate ssp. occurs in Utah, Wyoming, Idaho, Washington, Alberta and California (GERTSCH 1934 b).

Pisauridae

Dolomedes fulvatronotatus Bishop. The three specimens in the material were swept from the vegetation (Menyanthes-Drosera) of bogs. The species has been identified by Dr. GERTSCH.

Localities: B a r b.: Lomond, East Brook 15.7.1949 1 ♀ (E.P.). G r d. F.: Millertown 10.6.1951, 1 immature ♀ (C.L.), Lewisporte 26—27.6.1951, 1 immat. ♀ (C.L.).

Known previously only from Illinois.

Dolomedes scopularis C. Koch. This species is found in bogs and on moist river shores.

Localities: B u r g.: Hare Bay 21.6.1949 1 ♀ (C.L.), H u m b e r: Corner Brook 16.8.1949 3 juvv. (E.P.), G r d. F.: Norris Arms 24.8.1949 5 juvv. 1 pull. (E.P.), Lewisporte 26.6.1951, 1 ♀ with egg cocoon (C.L.), B o n. N.: Gambo 25—26.8.1949, 3 juvv. 1 pull. (E.P.).

Known from New York, Illinois, Pennsylvania, Michigan, and Minnesota, Utah and Idaho. CHAMBERLIN & IVIE (1946) mention further that most of the localities given for *D. triton* and *sexpunctatus* north of 40° N. lat. probable refer to *scopularis*.

Dolomedes vittatus Walck. In the vegetation of Ledum-Kalmia moors but also in other kinds of moors in caricetum.

T r. S.: Come by Chance 27.8.1949, 1 ♀ (E.P.), A v a l.: Hogans Pond 6.6.1949, 1 ♀ 2 juv. (E.P.), H u m b e r: Corner Brook 16.8.1949, 1 ♀ (E.P.).

Distributed on the mainland from the northeastern states of U.S.A. southward to Georgia (CHAMBERLIN & IVIE 1944, KASTON 1948).

Lycosidae

Pirata minutus Emert. A single male taken in S t. G. P.: South Branch 3.7.1949, on the margin of a rivulet (E.P.). This species is known from the southern states of New England, New York and Michigan (CHICKERING 1933).

Pirata montanus Emert. B a r b.: Lomond: Killed Evil Mountain 13.7.1949, 1 ♀ among litter in a maple grove (E.P.), and East Brook 14.7.1949, 2 ♀♀ under logs on a stony shore (E.P.). The species is known from the mountains of New England, New York, Pennsylvania and Utah (CHAMBERLIN 1908).

Pirata bryantae Kurata. The single specimen in the material, a female, found under a log on the shore of East River near St. Barbe (B a r b.) 26. 7. 1949 by Dr. Palmén has been identified by Dr. GERTSCH. The species is described from Canada.

Pirata piraticus Cl. This species, one of the most common Lycosids in Newfoundland, occurs in various moist biotopes and not only in Sphagnum bogs like some other species of the genus. Seasonal distribution of the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	3	4	4	16	1	12	5	—	—
females, ad.	6	15	10	35	28	25	20	12	15
immatures	20	5	3	17	8	19	47	48	17

The females are found throughout the summer, but it seems as if the majority of them attain maturity in the end of June, like the males. Subadults occur mainly in the material from the early part of June but also in late August.

Localities: S t. G. P.: Table Mountains, South Branch, St. Fintans, Stephenville Crossings, Spruce Brook. B u r g.: Port aux Basques, Cinq Cerf River, Burgeo, Grandy Brook, Hare Bay, Pushthrough, T r. S.: Come by Chance, Goobies, A v a l.: Placentia, Whitbournie, Brigus Junction, Holyrood, Hogans Pond, Waterford Bridge, Cape Broyle, Biscay Bay. H u m b e r: Cooks Brook, Corner Brook, Steady Brook, Deer Lake, Gaff Topsail, B a r b.: Woody Point, Lomond, Cow Head, Daniels Harbour, Port au Choix, Eddies Cove West, St. John Island, Doctors Brook, St. Barbe, Flowers Cove, W h. B.:Bartletts River, Englee. G r. B.: Springdale. G r d. F.: Millertown Junction, Norris Arms, Glenwood. T v i l l.: Twillingate. F o g o: Tilting. B o n. N.: Gander, Gambo. B o n. S.: Terra Nova. T r. N.: Port Rexton.

Canada and most parts of U.S.A., almost the whole of Europe, Algeria, Siberia and New Zealand. (BRISTOWE 1939).

Pirata insularis Emert. In moist moss along the margins of bog ponds and rivulets. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	3	10	3	—	—	—	—	—	—
females, ad.	1	2	1	1	3	1	4	3	3
immatures	1	—	1	—	3	—	—	3	—

Localities: S t. G. P.: South Branch, St. Fintans, B u r g.: Grand Bruit, Cinq Cerf River, F o r t.: Pushthrough, A v a l.: Cape Broyle, H u m b e r: Kittys Brook, B a r b.: Woody Point, Eddies Cove West, W h. B.: Bartletts River, G r d. F.: Norris Arms, B o n, N.: Gander, B o n, S.: Terra Nova.

New England, New Pennsylvania (CHAMBERLIN 1908, KASTON 1948). *Pirata piccolo* Dahl, considered here as synonymous with *insularis*, is known from Northern and Central Europe.

Alopecosa aculeata Cl. The specimens from Newfoundland were taken in various kinds of biotopes, in forests, Kalmia bogs, on river banks and in mountains at an altitude of 500—1500 ft.

S t. G. P.: Table Mountain 29.6.1949, 1 juv. (E.P.), B u r g.: Port aux Basques 28.6—1.7.1949, 3 ♂♂ (E.P.). B a r b.: Killed Evil Mountain 13.7.1949, 1 ♀ (E.P.), Eddies Cove West 2.8.1949, 1 ♀ 3 juvv. (E.P.). H u m b e r: Gaff Topsail 19—20.8.1949, 1 ♀ (C.L.), G r d. F.: Millertown Junction 22.8.1949, 1 ♀ (E.P.), Glenwood 23—24.8.1949, 1 ♀ (C.L.). B o n S.: Terra Nova 28. 7.1951, 1 ♀ 1 juv.(C.L.).

Canada, Maine, New York, Michigan, the Rocky Mountains, Alaska, most parts of Europe and Siberia. (CHAMBERLIN & IVIE 1947).

Arctosa quinaria Emert. The most abundant species of this genus in Newfoundland. It is found in various moist biotopes, in bogs, on river banks, wet meadows and in conifer forest. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	31—21	1—10	11—20	21—31
males	—	1	—	—	—	2	1	—	—
females	—	—	—	3	9	2	6	3	5

Presumably the majority of the spiders attain maturity in July. Females with egg cocoons were taken in the second half of July.

Locaiities: S t. G. P.: South Branch, B u r i n: Grand Bank, T r. S.: Come by Chance, H u m b e r: Corner Brook, Gaff Topsail, B a r b.: Lomond, Cow Head, Stanford River, Port au Choix, Eddies Cove West, St. John Island, Flowers Cove, St. Barbe, W h. B.: Raleigh, St. Anthony,

Englee, G r d. F.: Victoria Lake, Glenwood, Grand Falls, T w i l l.: Twillingate, F o g o: Seldom, B o n. N.: Gambo.

Canada, northern parts of New England, the Rocky Mountains, and Alaska (CHAMBERLIN & IVIE 1947).

Arctosa emertoni Gertsch. This species seems to prefer Sphagnum bogs but was also taken in other habitats, e.g. shady places in woodlands, and under stones on shores. Seasonal distribution of the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males (ad.)	—	3	1	1	—	—	—	—	—
females (ad.)	—	—	—	1	—	1	—	1	2
subadults	—	2	2	—	—	2	—	—	2

Localities: S t. G. P.: South Branch, B u r g.: South Branch, Recontre West, G r. B.: Springdale, G r d. F.: Gaff Topsail, Millertown, Victoria Lake, F o g o: Tilting, B o n. N.: Gambo, L. S t. J.: Lake St. John.

Eastern Canada and New England (KASTON 1948).

Arctosa virgo Chamberlin. A single male taken in a Sphagnum bog in B u r g.: Grandy Brook 25.6.1949 (E.P.). Reported from New England by KASTON (1948).

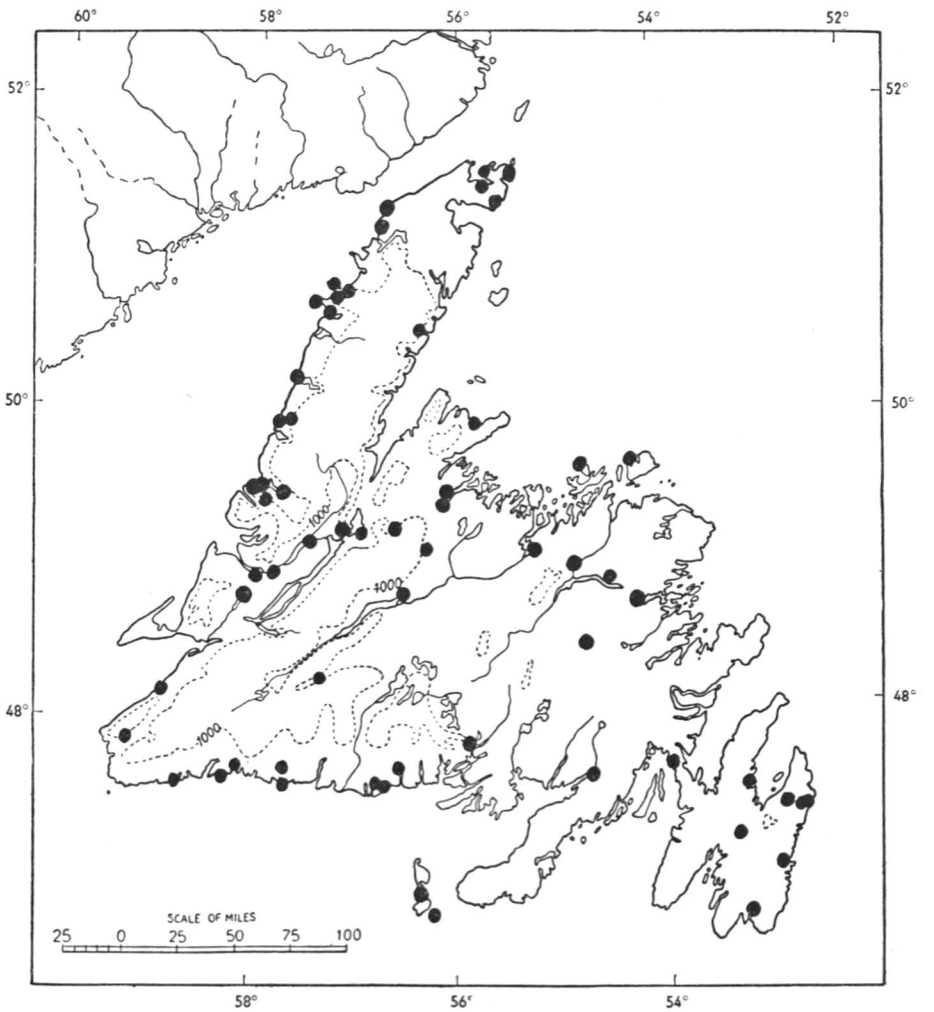
Arctosa alpigena Dol. A single immature specimen taken in Corner Brook 16.8.1949 in a Sphagnum bog (E.P.). This species is known from Canada, Alaska, the Rocky Mountains, Arizona, Eastern Greenland, Iceland, the British Isles, Fennoscandia, Denmark, Germany, Poland, the Alpine countries, the Murman coast, and Western Siberia (CHAMBERLIN & IVIE 1947, BRAENDEGAARD 1946, HOLM 1950).

Trochosa terricola pratensis Emert. This is obviously one of the commonest spiders in Newfoundland and distributed all over the country (see map. V). The European nominate form seems to prefer drier soils, but ssp. *pratensis* also occurs abundantly in humid habitats. Seasonal distribution of the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
adult males	3	1	1	—	—	1	3	2	6
subadult males	—	2	1	3	9	8	8	5	—
last moult of males						.....			
females, old (eggs layed)	1	6	5	8	13	18	15	4	4
» eggs not layed	10	10	4	2	—	5	7	4	4
» subadult	—	6	7	2	9	12	3	1	2
» last moult						.....			

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
probable mating period	.....								
egg-laying		.....							
younger instars:									
> 6 mm.	3	6	4	2	12	4	5	6	4
< 6 mm.	2	1	—	—	5	—	—	—	3

The period of mating probably begins in May and might and earlier than indicated in the table. The young ones, at least those hatched in July might



Map V. The distribution of *Trochosa terricola pratensis* in Newfoundland.

grow to a total length of about 6 mm. before the winter. In the late summer of the following year these spiders attain maturity (in a morphological sense). Then they hibernate a second time and mating takes place after hibernation. This interpretion agrees well with the Newfoundland material and the duration of the life cycle of *Trochosa terricola pratensis* is then, 2 years. In Fennoscandia *T. terricola* is also biennal.

Trochosa terricola Thor. has a circumpolar distribution. The nominate subspecies is known from most parts of Europe and from Asiatic Russia eastward to Kamchatka. In North America there are two subspecies: ssp. *orophila* Chamb. & Gertsch occuring in Alaska, Western Canada and in the Rocky Mountains, ssp. *pratensis* Emert. in Eastern Canada and the Northeastern States of U.S.A. The populations of this species from Newfoundland and Fennoscandia belong to the end links of the chain and show some differences in morphological as well as ecological characters.

Pardosa moesta Banks. The few specimens in the material were taken on various habitats, usually on open ground.

Localities: B u r g.: Burgeo 20—26.6.1949, 3 ♀♀ (E.P.), F o r t.: Pass Island 25.6.1949, 1 ♀ (C.L.), B a r b.: Cow Head 8.8.1949, 2 ♀♀ (E.P.), G r d. F.: Red Indian Lake 7.6.1951, 2 ♂♂ (C.L.).

Canada, New England, Wyoming and Alaska (CHAMBERLIN & IVIE 1947, LEVI & LEVI 1951).

Pardosa lapidicina Emert. The specimens are found under stones on peat ground, on clay banks and among rocks in mountains.

B u r g.: Cinq Cerf River 14—16.6.1949, 3 juv. (E.P.). B a r b.: Killed Evil Mountain 13.7.1949, 1 ♀ (E.P.). Serpentine Mountains 17.7.1949 1 ♀ at an altitude of 2000 ft. (E.P.), Flowers Cove 23—27.7.1949, 3 juv. (E.P. & C.L.). G r d. F.: Badger 25.6.1951, 1 ♀ (C.L.), B o n. N.: Gander Airport 2.6.1949, 2 juv., 1.9.1949, 4 juv. (E.P.).

Canada, New England, New York, Rhode Island, New Jersey, Distr. Columbia, Pennsylvania, Indiana, Iowa, Kansas, Arkansas, Wyoming and Texas (CHAMBERLIN 1908, LEVI & LEVI 1951).

Pardosa furcifera Thor. Taken only in the northernmost parts of Newfoundland. Habitat: stony seashores and peat ground.

Localities: B a r b.: Daniels Harbour 22—23.7.1949, 1 juv. (E.P.), Flowers Cove 23—27.7.1949, 4 ♀♀, 3 juv. (E.P.). W h. B.: Cooks Harbour 15.7.1949, 3 ♀♀ (C.L.), Griquet 15.7.1949, 3 ♀♀ (C.L.), Quirpon 15.7.1949, 1 ♀ (C.L.).

Labrador, Alaska, Greenland and Iceland (BRAENDEGAARD 1946, CHAMBERLIN & IVIE 1947).

Pardosa concinna Thor. B a r b.: Cow Head 8.8.1949, 1 ♀ from a Picea glauca swamp (E.P.). G r d. F.: Millertown Junction 21.8.1949, 1 ♀ probably

belonging to this species (epigynum somewhat aberrant), taken on stony ground (E.P.).

Canada, Northern New England, Wyoming and Alaska (CHAMBERLIN & IVIE 1947, LEVI & LEVI 1951).

Pardosa fuscula Thor. One of the more common *Pardosa* species in Newfoundland. Taken in various habitats: on open stony ground, under stones and pieces of wood in places influenced by settlements, on moors and river banks. Seasonal distribution of mature specimens in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	16	7	4	—	—	—	—
females	4	3	14	10	14	4	4	2	1

Localities: S t. G. P.: Table Mountains (at 1500 ft.), South Branch, St. Fintans, St. Davids, B u r g.: Port aux Basques, Recontre West, Big Bay (Recontre), A v a l.: Cape Broyle, H u m b e r: Corner Brook, Howley, B a r b.: Lomond, Woody Point, Cow Head, Stanford River, Eddies Cove West, Daniels Harbour, St. John Island, Flowers Cove, W h. B.: Bowaters Hare Bay, Fourché Harbour, G r d. F.: Millertown Junction.

Canada, the Rocky Mountains and Alaska (CHAMBERLIN & IVIE 1947).

Pardosa groenlandica Thor. A relatively common spider on stony shores and river banks. Seasonal distribution of mature specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	2	6	—	1	—	—	—	—	—
females	6	13	3	4	4	4	3	2	2

Maturity is presumably attained already in May and the adult females are found throughout the summer.

Localities: S t. G. P.: Piccadilly, Stephenville Crossings, St. Davids, St. Fintans, B u r g.: Grand Bruit, Burgeo, Cinq Cerf River, F o r t.: Terrenceville, A v a l.: Trepassey, Cape Broyle, Biscay Bay, Holyrood, H u m b e r: Deer Lake, Howley, B a r b.: Eddies Cove West, Port au Choix, St. John Island, W h. B.: Cooks Harbour, Raleigh, Bowaters Hare Bay, G r. B.: Springdale, G r d. F.: Norris Arms, T w i l l.: Twillingate, F o g o: Fogo Island, B o n. N.: Gander, Gambo.

Canada, Miquelon (1951 C.L.), New England (Northern states), Wyoming, Montana, Arizona, Alaska, Greenland and Iceland (BRAENDEGAARD 1946, CHAMBERLIN & IVIE 1947, LEVI & LEVI 1951).

Pardosa mackenziana Keys. The specimens were taken in moist places in woodlands, from the margins of Sphagnum bogs and river banks. Seasonal distribution of the adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	1	—	—	—
females	—	—	—	2	1	13	7	—	1

Maturity is probably attained in July.

Localities: S t. G. P.: Stephenville Crossings, H u m b e r : Steady Brook, B a r b.: Lomond, Cow Head, Daniels Harbour, Eddies Cove West, Doctors Brook, St. Barbe, G r d. F.: Millertown Junction.

Canada, New England, New York, the Rocky Mountains, Arizona and Alaska (CHAMBERLIN 1908, CHAMBERLIN & IVIE 1947).

Pardosa xerampelina Keys. On stony ground on shores and in open biotopes influenced by settlements, less frequently in forest. Seasonal distribution of mature specimens in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	4	2	4	—	—	—	—	—	—
females	7	4	10	7	10	2	12	7	4

Maturity is presumably attained as early as May. Adult females are found throughout the summer.

Localities: S t. G. P.: Table Mountains, South Branch, Piccadilly, Spruce Brook, B u r g.: Grandy Brook (Burgeo), Cinq Cerf River, Hare Bay, Recontre West, T r. S.: Come by Chance, A v a l.: Whitbournie, Waterford Bridge, Hogans Pond, Holyrood, Cape Broyle, H u m b e r : Cooks Brook, Steady Brook, Deer Lake, Kittys Brook, B a r b.: Lomond, Cow Head, Eddies Cove West, Daniels Harbour, Stanford River, W h. B.: Paquet, G r d. F.: Millertown Junction, Millertown, Norris Arms, Lewisporte.

Canada, New England, New York, Illinois, the Rocky Mountains and Alaska (CHAMBERLIN 1908, CHAMBERLIN & IVIE 1947). »Essentially a northern and mountain species» (CHAMBERLIN op. c.).

Pardosa saltuaria C. L. Koch. This species is taken on various kinds of peatland; only two of the samples containing *saltuaria* are from open peat bogs, the typical biotope of *P. saltuaria hyperborea* Thor. in Fennoscandia (PALMGREN 1939 p. 52). Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	2	—	—	—	—	—	—
females	1	2	—	1	1	2	1	1	2

Localities: B u r g.: Port aux Basques, Grandy Brook (Burgeo), Recontre West, Tr. S.: Come by Chance, A v a l.: Hogans Pond, H u m b e r : Gaff

Topsail, B a r b.: Woody Point, Cow Head, Eddies Cove West, Flowers Cove, W h. B.: Bartletts River, G r d. F.: Millertown Junction.

P. saltuaria (incl. ssp. *hyperborea*) is known from Eastern Canada, Northern New England, Greenland, Fennoscandia, the Central European mountains and the Pyrenees (BRAENDEGAARD 1946).

Gnaphosidae

Gnaphosa muscorum L. Koch. This species is found under stones in more or less dry places. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	1	—	2	—	—	—	—
females	—	1	—	—	—	—	1	—	2

Localities: B u r g.: Grand Bruit, F o r t.: Pushthrough, B u r i n: Grand Bank, B a r b.: Killed Evil Mountain, W h. B.: Raleigh, Bartletts River, G r d. F.: Millertown Junction.

Known from Eastern Canada, New York and other eastern states of U.S.A. and westward to Colorado, New Mexico, Utah and California (CHAMBERLIN 1922). In the Old World: in Northern and Central Europe, in U.S.S.R. eastward to Jenissej (REIMOSER 1919, CHARITONOV 1932).

Gnaphosa parvula Banks. Under stones and pieces of wood in very moist places, borders of moor ponds, etc. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	—	—	1	—	2
females	—	1	1	—	—	4	2	2	3

Localities: F o r t.: Terrenceville, H u m b e r: Kittys Brook, B a r b.: Port au Choix, Eddies Cove West, G r d. F.: Victoria Lake, Glenwood, B o n. N.: Gambo, B o n. S.: Terra Nova, L. S t. J.: Lake St. John.

New Hampshire, Massachusetts, Connecticut, New York, Virginia and Wyoming (CHAMBERLIN 1922, KASTON 1948, LEVI & LEVI 1951).

Haplodrassus signifer C.L. Koch. S t. G. P.: South Branch 2.7.1949, 1 ♀ (C.L.). G r d. F.: Millertown Junction 21.8.1949, 1 ♀ 1 juv. from a Kalmia bog (E.P.).

Distributed throughout the U.S.A. and Canada, further in Greenland and most parts of the Palearctic region. In spite of its occurrence in subtropical areas also (Palestine and Irak) BRAENDEGAARD (1946) considers the species as boreal.

Haplodrassus hiemalis Emert. Taken by sifting leaf mould in forests and swamps but also found under stones in culture-influenced open biotopes.

S t. G. P.: Spruce Brook 8.7.1949, 2 ♀♀ (E.P.). B a r b.: Cow Head 10.8.1949, 1 ♀ (E.P.), Stanford River 9—11.8.1949, 2 ♀♀ (E.P.), G r d. F.: Millertown Junction 22.8.1949, 1 juv. (C.L.). B o n. N.: Gander 2.6.1949, 1 ♂ 1 juv. (E.P.), Gambo 25.8.1949, 1 juv. (E.P.).

Mentioned from Newfoundland by CHAMBERLIN (1922). Known further from New Hampshire, Massachusetts, Vermont, New York, New Jersey and Colorado (CHAMBERLIN 1922, 1936. KASTON 1948).

Orodrassus vastus Chamb. & Ivie. In conifer forest under loose bark of fallen trunks. B a r b s.: Eddies Cove West 30.7—2.8.1949, 1 ♂ 2 ♀♀ (E.P.), Doctors Brook 31.7.1949, 1 ♀ (E.P.). Recorded by CHAMBERLIN (1922) only from Washington.

Drassodes neglectus Keys. Found under stones in various biotopes (Kalmia moor, conifer forest, sandy shore, culture-influenced open ground).

B u r g.: Port aux Basques 30.6.1949, 1 juv. (E.P.), Grand Bruit 19.6.1949, 1 ♀ (E.P.). H u m b e r: Corner Brook 10.7.1949, 1 ♀ (E.P.). B a r b.: Cow Head 7.8.1949, 1 ♀ (E.P.). G r. B.: Springdale 20—21.6.1951, 1 ♀ (C.L.). T w i l l.: Tvillingate 4—8.7.1951, 2 ♀♀ (C.L.). F o g o: Fogo 29.6.1951, 1 ♀ (C.L.). G r d. F.: Norris Arms 24.8.1949, 1 juv. T r. N.: Port Rexton 30.7.1951, 1 juv. (C.L.).

Known from Canada, New England, New York, North Central States and westward to Utah and Colorado (CHAMBERLIN 1922).

Zelotes subterraneus C.L. Koch. More common than any other Gnaphosid in Newfoundland. Under stones and pieces of wood in various habitats. Present in several samples from culture-influenced biotopes. Seasonal distribution of the adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	—	2	—	1	—	1
females	14	12	—	2	4	—	7	3	—

Localities: S t. G. P.: South Branch, Table Mountains, St. Davids, St. Fintans, B u r g.: Port aux Basques, Grand Bruit, Grandy Brook (Burgeo), Recontre West, A v a l.: Cape Broyle, Holyrood, H u m b e r: Corner Brook, Kittys Brook, Gaff Topsail, B a r b.: Lomond, Woody Point, Serpentine Mountains, Cow Head, Eddies Cove West, Port au Choix, St. John Island, Port Saunders, W h. B.: Raleigh, G r. B.: Nippers Harbour, T w i l l.: Twillingate, G r d. F.: Millertown, Millertown Junction, Red Indian Lake, Norris Arms.

Canada and most parts of U.S.A., more in the north (CHAMBERLIN & IVIE 1947, KASTON 1948). Most parts of Europe (not in the British Isles!), Siberia and Turkestan (REIMOSER 1919).

Clubionidae

Clubiona riparia L. Koch. Beaten from the vegetation or sifted from dead leaves in maple groves and other shady places. Also in mountains (1500—2000 ft.) in Poterium canadense — Osmunda regalis vegetation. One specimen was taken on a street lamp in Corner Brook Town. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	5	2	—	—	1	—	—	—	—
females	1	—	7	—	4	—	1	—	1

Localities: St. G. P.: Table Mountains, Burg.: Port aux Basques, Grand Bruit, Cinq Cerf River, Grandy Brook (Burgeo), Recontre West, Aval.: Cape Broyle, Humber: Corner Brook, Deer Lake, Barb.: Lomond, Serpentine Mountains, Cow Head, Stanford River, Grd. F.: Badger, Bon. N.: Gambo.

Known from Canada, New England, New York, the Rocky Mountains and Alaska (CHAMBERLIN & IVIE 1947).

Clubiona bryantae Gertsch. In the herbaceous vegetation of bogs, at the border of snow layers at 1500 ft. (Table Mountains) and in Picea mariana swamps.

St. G. P.: Table Mountains 29.6.1949, 1 ♂ (E.P.). Burg.: Port aux Basques 1.7.1949, 1 ♂ 1 ♀ (E.P.). Humber: Gaff Topsail 20.8.1949, 1 ♀ (E.P.). Barb.: Eddies Cove West 29.7—2.8.1949, 1 ♂ 1 ♀ (E.P.), St. Barbe 26.7.1949, 1 ♀ (E.P.). Wh. B.: Raleigh 17—18.7.1949, 1 ♂ (C.L.). Twill.: Twillingate 3.7.1951, 1 ♀ (C.L.). Fogo: Seldom 3.7.1951, 1 ♀ (C.L.). Grd. F.: Badger 22—25.6.1951, 1 ♂ (C.L.).

Reported by KASTON (1948) from New England and Michigan.

Clubiona obesa Hentz. St. G. P.: Spruce Brook 8.7.1949, 1 ♀ taken in a brook valley (E.P.). Humber: Deer Lake 30.5.1951, 1 ♀ in a flooded bog (C.L.). Listed by CROSBY & BISHOP (1928 a) from New York and by KASTON (1948) from New England.

Clubiona mixta Emert. A single female taken on Twillingate Island (Twill.) 8.7.1951 (C.L.). Known from New England (KASTON op.c.).

Clubiona canadensis Emert. Under loose bark of conifers (Picea glauca and P. mariana), in forest litter, under stones and pieces of wood on open, culture-influenced ground, in the herbaceous vegetation of bogs, etc. Adult specimens found throughout the summer:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	1	2	1	1	1	3	1	1	1
females	3	1	5	4	6	9	3	2	1

Localities: S t. G. P.: Table Mountains, South Branch, Stephenville Crossing, Spruce Brook, B u r g.: Grand Bruit, Grandy Brook (Burgeo), Big Bay (Recontre West), A v a l.: Cape Broyle, Waterford Bridge, H u m b e r : Deer Lake, Gaff Topsail, B a r b.: Killed Evil Mountain, Cow Head, Eddies Cove West, Doctors Brook, Doctors Hill, Daniels Harbour, Port au Choix, W h. B.: Bartletts River, Raleigh, St. Anthony, Fourché Harbour, G r d. F.: Badger, Millertown Junction, B o n. N.: Gambo.

Known from Canada, New England, New York, the Rocky Mountains, Alaska and the northern part of the Pacific coast area of U.S.A. (CHAMBERLIN & IVIE 1947).

Clubiona norvegica Strand. In the vegetation and under pieces wood on sandy ground (sea shores, river banks) but also in saltmarsh and bog. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	—	—	1	1	—	3	1	—
females	—	3	5	1	12	1	8	2	—

Localities: S t. G. P.: South Branch, B u r g.: Port aux Basques, Grand Bruit, Burgeo, H u m b e r : Deer Lake, W h. B.: Cooks Harbour, Raleigh, Griquet, Fourché Harbour.

I have seen no nearctic records of this North European species in the literature, but Dr. GERTSCH has informed me in a letter that *norvegica* is already known from North America.

Clubiona kulczynskii De Less. Under loose bark and in forest litter, but also in herbaceous vegetation in shady places.

S t. G. P.: Spruce Brook 9.7.1949, 1 ♀ (E.P.). B u r g.: Recontre West 15—20.6.1949, 1 ♀ (C.L.), B a r b.: Eddies Cove West 30.7.1949, 1 ♀ (E.P.). W h. B.: Bowaters Hare Bay 14.7.1949, 1 ♀ (C.L.).

Wyoming (*C. intermontana* of GERTSCH 1933, LEVI & LEVI 1951), Northern Fennoscandia, the Alps and the Carpathians (MILLER 1951).

Clubiona abbotii L. Koch. Mainly found by sifting leaves in shady places. Seasonal distribution of adults:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	1	2	—	—	—	—	—	1	—
females	2	2	2	—	—	—	1	4	2

Obviously this spider reaches maturity in August and hibernates as the adult.

Localities: B u r g.: Cinq Cerf River, Grandy Brook (Burgeo), Recontre West, A v a l.: Cape Broyle, Waterford Bridge, H u m b e r : Corner Brook,

Kittys Brook, Barb.: Cow Head, Grd. F.: Millertown Junction, Bon. N.: Gander, Gambo.

Taken in Miquelon (1951 C.L.). Further known from New England, New York and Montana (CROSBY & BISHOP 1928 a, GERTSCH & JELLISON 1939, KASTON 1948).

Clubiona furcata Emert. The species has been identified by Dr. GERTSCH. Taken in damp situations.

Humber: Gaff Topsail 19.8.1949, 1 ♂ from a Kalmia bog, 20.8.1949, 1 ♂ from a Picea mariana swamp (E.P.). Barb.: Cow Head 12.8.1949, 1 ♀ sifted from moss of a bog (E.P.).

Described from Canada: Saskatoon.

Agroeca ornata Banks. Among forest litter (in several samples from maple groves). Also in bogs. Only females and immature specimens in the material:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females, ad.	—	2	—	—	1	—	1	7	1
immatures	—	—	—	—	1	—	1	7	3

Localities: Burg.: Grand Bruit, Humber: Cooks Brook, Corner Brook, Kittys Brook, Gaff Topsail, Barb.: Lomond, Cow Head, Wh. B.: Bartletts River, Grd. F.: Victoria Lake, Bon. N.: Gambo.

Known from Quebec, Ontario, Alberta, New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Michigan, Wisconsin, Minnesota, Iowa, Utah and California (KASTON 1938).

Micaria pulicaria Sund. Under stones, loose bark and among litter in woods but also in culture-influenced biotopes. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	1	—	—	—	—	1	2	—	—
females, ad.	4	2	3	2	1	—	2	—	1
immatures	1	—	—	—	—	2	2	—	—

Localities: Fort.: Pass Island, Burin: Grand Bank, Tr. S.: Some by Chance, Aval.: Cape Broyle, Spaniards Bay, Humber: Deer Lake, Barb.: Woody Point, Eddies Cove West, Doctors Hill, Port Saunders, Port au Choix, Twill.: Twillingate, Fogo: Fogo.

Taken in St. Pierre and Miquelon (1951 C.L.). Known from New England and Michigan (*M. montana* of KASTON 1948) and in the Old World from most parts of Europe and from Siberia eastward to Kamchatka (BRISTOWE 1939).

Micaria longispina Emert. A single female sifted from litter in a maple

grove at the foot of Killed Evil Mountain (B a r b.) 13.7.1949 (E.P.). This species is known from Massachusetts, Wisconsin and Florida (KASTON 1948, LEVI 1951).

Xysticidae

Misumena vatia Cl. Collected by sweeping grass and weeds in various biotopes. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	1	—	1	1	—	—	1	—	—
females, ad.	1	1	—	1	3	1	—	2	1
immatures	—	—	—	3	8	2	—	5	—

Localities: S t. G. P.: Table Mountains, St. Fintans, Spruce Brook, B u r g.: Port aux Basques, A v a l.: Holyrood, H u m b e r : Steady Brook, Corner Brook, Kittys Brook, B a r b.: Lomond, Glenbournie, Stanford River, Cow Head, G r d. F.: Millertown, Badger, B o n. N.: Gander, T r. N.: Shoal Harbour.

Known from Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, Alaska, nearly all states of U.S.A. and further from most countries in the Palearctic region (GERTSCH 1939, CHAMBERLIN & IVIE 1947, BRISTOWE 1939).

Coriarachne versicolor Keys. Under loose bark of dead trees. H u m b e r : Steady Brook 10.7.1949, 1 ♀ (E.P.). B a r b.: Doctors Brook 31.7.1949, 1 ♀ (E.P.).

Nova Scotia, Ontario, Manitoba and the United States east of the Rocky Mountains (GERTSCH 1939, CHAMBERLIN & IVIE 1947).

Oxyptila americana Banks. Sifted from moist leaf mould in deciduous woods, also found under stones.

A v a l.: South Side Hills (at St. Johns')4.6.1949, 1 ♀ (E.P.). G r d. F.: Badger 22.6.1951 1 juv. (C.L.), Glenwood 23—24.8.1949, 1 ♀ (C.L.), B o n. N.: Gambo 25.8.1949, sifting sample containing 15 ♂♂ 23 ♀♀ (E.P.). — Two immature specimens from Corner Brook (H u m b e r) and Millertown Junction (G r d. F.) might belong to this species.

Labrador (Lance aux Loupes 1951 C.L.), Ontario, Manitoba, New Hampshire, Maine, Massachusetts, Connecticut, New York, Ohio, Michigan, Minnesota and Nebraska (GERTSCH 1939).

Oxyptila bryantae Gertsch (?). One just-moulted female, probable this species, taken in B a r b.: Port au Choix 5.8.1949, from the margin of a bog pond (E.P.). *O. bryantae* is known from Quebec, Manitoba, Connecticut, New York, Maryland and Minnesota (GERTSCH 1939).

Xysticus triguttatus Keys. B u r g.: Recontre West 15—20.6.1949, 1 ♀ (C.L.). F o g o : Seldom 3.7.1951, 1 ♂ (C.L.). This species is known from Canada and the United States east of the Rocky Mountains (GERTSCH 1939).

Xysticus discursans Keys. The specimens were taken by sweeping bushes and herbaceous vegetation in various biotopes.

S t. G. P.: South Branch 2.7.1949, 1 ♀ (C.L.), B u r g.; Port aux Basques 30.6.1949, 1 ♂ from the dunes near Grand Bay (E.P.), B a r b.: Port au Choix, 4.8.1949, 1 juv. (E.P.). F o g o : Tilting 29.6—1.7.1951, 1 ♀ (C.L.).

Nova Scotia, British Columbia, Maine, New Hampshire, Massachusetts, New York, Pennsylvania, Illinois, Iowa, Ohio, Alabama, Missisippi, Colorado, Utah, Idaho, Washington, Arizona, Nevada and Mexico (GERTSCH 1939).

Xysticus elegans Keys. In peat bogs and on river banks. H u m b e r : Corner Brook 16.8.1949, 1 just-moulted ♀ (E.P.). B a r b.: St. Barbe 26.7. 1949, 1 subadult ♂ and 2 other immature specimens (E.P.). B o n. N.: Gambo 28.8.1949, 1 ♂ (E.P.). — Some immature specimens from Kittys Brook (H u m b e r), St. John Island (B a r b.) and Gambo (B o n. N.) probably belong to this species.

Known from Canada and the United States east of the Rocky Mountains (GERTSCH 1939).

Xysticus emertoni Keys. Among the herbaceous vegetation on grassy soil. F o r t.: St. Albans 26.6.1949, 1 ♀ (C.L.). G r d. F.: Red Indian Lake, Harbour Round 7.6.1951, 1 ♀ (C.L.), Millertown 14.6.1951, 1 ♂ (C.L.), Badger 22—25. 6.1951, 1 ♂ (C.L.).

Known from Quebec, Ontario, Manitoba, New Hampshire, Massachusetts, New York, Distr. Columbia, Minnesota, Montana, Wyoming, Utah, Colorado, Georgia, Texas and New Mexico (GERTSCH 1939, LEVI & LEVI 1951).

Xysticus canadensis Gertsch. Sifted from litter on a river shore and in a Picea mariana swamp at 1400 ft. H u m b e r : Gaff Topsail 20.8.1949, 1 ♀ and 1 immature specimen (E.P.). W h. B.: Bartletts River 20.7.1949, 1 immature specimen (C.L.).

Known from Labrador (Battle Harbour), Alberta and the White Mountains in New Hampshire (GERTSCH 1939).

Philodromidae

Philodromus pernix Bl. Collected on sandy sea shores. B a r b.: Lomond Bonne Bay 15.7.1949, 1 immature specimen (E.P.). Eddies Cove West 28.7. 1949, 2 ♀♀ (E.P.), St. John Island 3.8.1949, 1 ♀ (E.P.). B o n. S.: Terra Nova 26—28.7.1951, 1 immature specimen (C.L.).

Known from Eastern Canada, New England and Alaska (CHAMBERLIN & IVIE 1947).

Philodromus rufus Walck. Shaken from bushes in maple groves and other deciduous woods.

S t. G. P.: South Branch 3.7.1949, 1 ♀ 2 juv. (E.P.), Spruce Brook 19.7. 1949, 7 ♀♀ (E.P.). H u m b e r : Steady Brook 10.7.1949, 5 ♀♀ (E.P.), B a r b.: Glenbournie 19.7.1949, 1 ♀ (E.P.), Woody Point 16.7.1949, 1 ♀ (E.P.). G r. B.: Halls Bay 22.6.1951, 1 ♀ (C.L.). L. S t. J.: Lake St. John 27.7. 1951, 1 juv. (C.L.).

Southern Canada, most parts of the United States, Alaska, Southern and Central Europe, England, South Sweden, European and Asiatic Russia, Tunis and Algeria (BRISTOWE 1939, CHAMBERLIN & IVIE 1947).

Thanatus formicinus Oliv. (?). Only immature specimens found on the ground in various biotopes.

H u m b e r : Corner Brook 16.7.1949, 1 subad. ♀ (E.P.), Kittys Brook 19.8.1949, 1 juv. (E.P.). W h. B.: Cooks Harbour 16.7.1949, 1 juv. (C.L.). G r d. F.: Millertown Junction 22.8.1949, 1 juv. (E.P.). B o n. S.: Terra Nova 28—29.7.1951, 2 juv. (C.L.).

Tibellus maritimus Menge. The specimens were collected in various biotopes (marshes, meadows, open stony ground) by sweeping herbaceous vegetation. There are no adult males in the material. The seasonal distribution of adult females and immature specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females, ad.	—	1	2	2	—	—	—	1	—
immatures	—	—	—	1	2	1	3	3	6

Localities: S t. G. P.: St. Fintans, Spruce Brook, H u m b e r : Deer Lake, Kittys Brook, Gaff Topsail, B a r b.: Eddies Cove West, W h. B.: Raleigh, Bartletts River, G r. B.: Springdale, G r d. F.: Badger, Millertown Junction, F o g o : Seldom, B o n. N.: Gambo.

In Canada, the Rocky Mountains, Alaska and the states of U.S.A. east of the Rocky Mountains, most parts of Europe and in Asiatic Russia (CHAMBERLIN & IVIE 1947, HOLM 1950).

Salticidae

Salticus scenicus L. A single male found under a stone on Signal Hills at St. John's (A v a l.) 28.8.1949, (E.P.). Common over much of North America and Europe; North Africa (PECKHAM & PECKHAM 1909, BRISTOWE 1939).

Neon nellii Peckham. This species was taken by sifting litter at the margin of a Kalmia bog at Hogans Pond (A v a l.) 6.6.1949, 1 ♂ 6 ♀♀ 2 juv. Known from Quebec, Ontario, the Canadian Rocky Mountains, New England, New

York and Washington State (PECKHAM & PECKHAM 1909, CROSBY & ZORSCH 1935).

Sitticus palustris Peckham. Taken by sweeping herbaceous vegetation around bog ponds and sifted from litter in other moist biotopes (river banks, sea shores, etc.).

S t. G. P.: Stephenville Crossing 6.7.1949 1 ♀ (E.P.). B u r g.: Cinq Cerf River 16.7.1949, 1 ♀ (E.P.), F o r t.: Terrenceville 13—14.6.1951, 1 ♂ (C.L.). H u m b e r: Corner Brook 16.8.1949, 1 ♂ (E.P.), Deer Lake 25.7.1951, 1 ♂ (C.L.). B a r b.: Eddies Cove West 30.7.1949, 1 ♀ 1 juv. (E.P.), St. John Island 3.8.1949, 1 ♂ 1 juv. G r d. F.: Badger 22—25.6.1951, 1 juv. (C.L.).

Known from Anticosti Island, Lake Winnipegosis, Alberta, Maine, Massachusetts, Connecticut, New York, Michigan and Wisconsin (PECKHAM & PECKHAM 1909).

Sitticus striatus Emert. Collected by sweeping vegetation at the edges of bogs.

H u m b e r: Kittys Brook 18.8.1949, 1 ♀ (E.P.). B a r b.: Port au Choix 5.8.1949, 1 ♂ 1 ♀ (E.P.). W h. B.: Bartletts River 19—20.7.1949, 1 juv. (C.L.).

Known from Maine, Massachusetts, New York and Wisconsin (CROSBY & BISHOP 1928a, LEVI 1951).

Evarcha hoyi Peckham. Among the herbaceous vegetation in various biotopes.

B u r g.: Recontre West 17—19.6.1949, 1 ♀ (C.L.). A v a l.: Cape Broyle 7.6.1949, 1 ♀ (E.P.). H u m b e r: Corner Brook 16.8.1949, 1 ♀ (E.P.). G r. B.: Springdale 20.—21.6.1951, 1 ♀ (C.L.).

Ottawa, New England, New York, Michigan, Wisconsin, Pennsylvania, S. Dakota, Wyoming, Montana, Colorado, Arizona and California (PECKHAM & PECKHAM 1909, CHICKERING 1933, GERTSCH & JELLISON 1939, LEVI & LEVI 1951).

Metaphidippus montanus Emert. Collected by sweeping bushes and sifting dead leaves in various biotopes. Seasonal distribution of the adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—20	11—20	21—31
males	—	2	1	3	2	—	—	—	—
females	—	—	—	2	2	—	—	—	1

S t. G. P.: Table Mountains, South Branch, Spruce Brook, B u r g.: Recontre West, H u m b e r: Steady Brook, B a r b.: Lomond, Cow Head, G r d. F.: Millertown Junction.

Eastern Canada, New Hampshire, Michigan, North Carolina (in mountains) and Montana (PECKHAM & PECKHAM 1909, CHICKERING 1933, GERTSCH & JELLISON 1939).

Metaphidippus flavipedes Peckham. Collected by sweeping or beating in river valleys or other places with rich vegetation.

S t. G. P.: South Branch 2—3.7.1949, 2 ♀♀ (E.P.), Spruce Brook 8—9.7. 1949, 1 ♂ (E.P.). H u m b e r : Kittys Brook 18.7.1949, 1 ♂ (E.P.). B a r b.: Lomond 15.7.1949, 1 juv. (E.P.).

Known from Labrador, Maine, New York and Michigan (PECKHAM & PECKHAM 1909, CROSBY & BISHOP 1928 a).

Phidippus purpuratus Keys. On sun-exposed rocks and under stones on the coastal tundra. Some specimens are taken on dry culture-influenced open ground. Seasonal distribution of adult specimens:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males	—	6	—	1	—	—	—	—	—
females	—	5	2	—	—	—	—	—	—

Localities: B u r g.: Grand Bruit, Recontre West, G r. B.: Springdale, T w i l l.: Twillingate, F o g o : Tilting, G r d. F.: Norris Arms.

Eastern three-fourths of U.S.A. from Utah and Nebraska (CHICKERING 1933).

Phidippus princeps Peckham. A single male taken 14.6.1949 (E.P.) on the coastal tundra between Grand Bruit and Cinq Cerf River (B u r g.). Known from Massachusetts, Connecticut, Pennsylvania, Maryland, Virginia and South Carolina (PECKHAM & PECKHAM 1909, KASTON 1945, 1948).

Phidippus whitmanii Peckham. One female found in Recontre West (B u r g.) near the village 15.6.1959 (C.L.), together with *P. purpuratus*. Known from New Hampshire, Connecticut, New York and Wisconsin (PECKHAM & PECKHAM 1909, KASTON 1945, 1949).

Dictynidae

Argenna obesa Emert. Two females found among litter on the shore at Grand Bank (B u r i n) 3.8.1951 (C.L.). Reported from New England (KASTON 1948).

Dictyna annulipes Bl. Swept from the herbaceous vegetation. B u r g.: Grandy Brook (Burgeo) 2.6.1949, 1 ♀ (E.P.). B o n N.: Gander 2.6.1949, 1 juv. (E.P.). The species is known from Canada, New England, the Rocky Mountains and Alaska (*D. muraria* of CHAMBERLIN & IVIE 1947, LEVI & LEVI 1951).

Dictyna bostoniensis Emert. One male and one female swept from the vegetation on the shore of Joe Glodes Pond at Millertown Junction (G r d. F.) 21.8.1949 (E.P.). Known from New England and Georgia (CHAMBERLIN & IVIE 1944, KASTON 1948).

Dictyna brevitarsa Emert. A single male (identified by Dr. GERTSCH) and taken in Millertown Junction (G r d. F.) 21.8.1949; in the same sample as the preceeding species (E.P.). Known from Eastern Canada, New England, New Jersey, Michigan, Idaho and Alaska (GERTSCH & IVIE 1936, CHAMBERLIN & IVIE 1947).

Dictyna phylax Gertsch & Ivie (?). Taken in bogs. H u m b e r : Kittys Brook 18.8.1949, 1 subad. ♂ and 1 subad. ♀ (E.P.), Gaff Topsail 19.8.1949, 1 subad. ♂ from a Kalmia bog (E.P.). *D. phylax* is known from Alberta, Wyoming and Minnesota (GERTSCH & IVIE 1936, LEVI & LEVI 1951).

Amaurobiidae

Callobius bennetti Bl. This is obviously a common species in Newfoundland and probably distributed all over the country. Found under stones and pieces of wood, under bark of fallen trunks, and also by sifting dead leaves. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	1	—	—	—	—	—	—
females, ad.	2	5	3	4	3	9	7	—	2
immatures	1	9	25	18	12	16	16	2	21

Localities: S t. G. P.: Table Mountains (at 1500 ft.), South Branch, Spruce Brook, B u r g.: Port aux Basques, Grand Bruit, Cinq Cerf River, Burgeo, Ramea Island, Recontre West, F o r t.: Pass Island, Pushthrough, A v a l.: Holyrood, H u m b e r : Steady Brook, Kittys Brook, Gaff Topsail (at 1400 ft.), B a r b.: Lomond, Cow Head, Stanford River, Daniels Harbour, Port au Choix, Eddies Cove West, Doctors Brook, W h. B.: Bartletts River, Fourché Harbour, Great Harbour Deep, G r d. F. Norris Arms, B o n. N.: Gander Airport, Gambo.

Known previously from Newfoundland and further from Anticosti Island, Nova Scotia, Ontario, Manitoba, Maine, New Hampshire, Massachusetts, Connecticut, New York, Pennsylvania, Ohio, Tennessee, Indiana, Wisconsin and Iowa (CHAMBERLIN 1947).

Walmus borealis Emert. Collected by sifting dead leaves in shady places. Seasonal distribution:

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	1	1	—	—	—	—	—	—	—
females, ad.	1	—	—	4	—	—	1	—	22
immatures	2	—	12	32	5	—	10	5	41

Localities: S t. G. P.: Table Mountains (at 1500 ft.), South Branch, Spruce Brook, B u r g.: Grand Bruit, Grandy Brook (Burgeo), H u m b e r: Cooks Brook, B a r b.: Lomond, Cow Head, Stanford River, G r d. F. Millertown Junction, B o n. N.: Gander Airport, Gambo.

Known previously from Newfoundland and further from Quebec, Ontario, Manitoba, Maine, Massachusetts, New Hampshire, Vermont, New York (CHAMBERLIN 1947, KASTON 1948).

Callioplus euoplus Bishop & Crosby. Found under stones and logs and among litter on moist ground.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
males, ad.	—	—	1	—	—	—	—	—	—
females, ad.	1	9	4	—	2	—	—	3	5
immatures	5	9	25	1	23	3	—	16	4

Localities: S t. G. P.: Table Mountains (at 1500 ft.), South Branch, B u r g.: Grand Bruit, Cinq Cerf River, Grandy Brook (Burgeo), H u m b e r: Kittys Brook, Gaff Topsail (1400 ft.), B a r b.: Lomond, Glenbournie, St. Barbe, W h. B.: Bartletts River, G r d. F.: Millertown Junction, B o n. N.: Gander Airport, Gambo.

Known from Quebec and Maine (BISHOP & CROSBY 1935, CHAMBERLIN 1947).

Callioplus tibialis Emert. Under stones and logs, but also in forest litter. There are no adult males in the material.

	June			July			August		
	1—10	11—20	21—30	1—10	11—20	21—31	1—10	11—20	21—31
females, ad.	—	—	—	—	2	1	—	1	—
immatures	—	—	—	9	8	3	2	29	—

Localities: S t. G. P.: South Branch, Spruce Brook, B u r g.: Port aux Basques, H u m b e r: Cooks Brook, Corner Brook, Gaff Topsail, B a r b.: Lomond, Glenbournie, Cow Head, Stanford River, Doctors Hill (at about 800 ft.), Doctors Brook, W h. B.: Bartletts River.

Known from Quebec and from the mountains of New Hampshire, Massachusetts, Vermont and New York (CROSBY & ZORSCH 1935, CHAMBERLIN 1947, KASTON 1948).

Summary.

In the present paper 220 species of spiders are recorded from Newfoundland. Following species are described as new:

Bathyphantes rufulus n.sp. ♂ ♀
Tapinocyba lindrothi n.sp. ♀
Tapinocyba exigua n.sp. ♀
Collinsia palmeni n.sp. ♀
Hilaira algida n.sp. ♀
Hilaira dubia n.sp. ♀
Hilaira aquilonia n.sp. ♀
Porrhomma gertschi n.sp. ♂ ♀

»*Erigone*» *mentasta* Chamb. & Ivie has been placed in the genus *Hilaira* and a male, probably belonging to this species, is described.

Following new synonymies are stated (synonyme in parentheses):

Estrandia grandaeva Keys. (Linyphia tridens Schenkel).

Dismodicus bifrons Bl. (D. decemoculatus Emert., D. variegatus Jacks., D. modicus Chamb. & Ivie).

Argyneta cauta Cambr. (A. olivacea Emert.).

Pirata insularis Emert. (P. piccolo Dahl).

Micaria pulicaria Sund. (M. montana Emert.).

The generic names *Bathyphantoides, Catabrithorax, Chocorua* and *Mythoplastoides* are dropped as synonymes in favour for *Bathyphantes, Collinsia, Diplocephalus* and *Entelecara.*

New for the Nearctic Region are *Bathyphantes gracilis* Bl., *Centromerus bicolor* Bl., *Trachynella nudipalpis* Westr. and *Cornicularia unicornis* Cambr. In addition to them there are two less certain cases: *Lepthyphantes nigriventris* L. Koch and *Argyneta decora* Cambr.

58 of the spider species from Newfoundland occur also in Europe. 11 of these are supposed to have been introduced into Newfoundland by man. Some other zoogeographical aspects of the spider fauna are discussed. Data concerning phenology and habitat are given for numerous species.

References.

ARCHER, A. F., 1940, The Argiopidae or orb-weaving spiders of Alabama. Alabama Mus. Nat. Hist., paper N:o 14.

—»— 1946, The Theridiidae or comb-footed spiders of Alabama. Ibid., 22.

—»— 1950, A study of Theridiid and Mimetid spiders with descriptions of new genera and species. Ibid., 30.

BANKS, N., 1892, The spider fauna of the Upper Cayuga Lake basin. Proc. Philadelphia Acad. Nat. Sci., 44.

BISHOP, S. C. & CROSBY, C. R., 1932, Studies in American spiders: the genus Grammonota. Journ. New York Ent. Soc., 40.

—»— 1935, A new genus and two new species of Dictynidae (Araneae). Proc. Biol. Soc. Washington, 48.

—»— 1938, Studies in American spiders: miscellaneous genera of Erigonidae, II. Journ. New York Ent. Soc., 44.

BLAUVELT, H. H., 1936. The comparative morphology of the secondary sexual organs of Linyphia and some related genera including a revision of the group. Festschr. f. Embrik Strand, 2.

BONNET, P., 1951, Difficultés de nomenclature chez les Aranéides. IV, La question Lycosa-Tarentula-Pardosa. Bull. Soc. D'Hist. Nat., 86.

BRAENDEGAARD, J., 1940, I. Spiders (Araneina)from Northeast Greenland between lats. 70° 25′ and 76° 50′ N. II. On the possibility of a reliable determination of species of the females of the genus Erigone. Medd. om Grønland, 125 N:o 8.

—»— 1946, The spiders (Araneina) of East Greenland, a faunistic and zoogeographical investigation. Ibid. 131 N:o 15.

BRISTOWE, W. S., 1939, The Comity of Spiders. I. London.

CHAMBERLIN, R. V., 1908, Revision of North American spiders of the family Lycosidae. Proc. Philadelphia Acad. Nat. Sci., 60.

—»— 1922, The North American spiders of the family Gnaphosidae. Proc. Biol. Soc. Washington, 25.

—»— 1936, Records of North American Gnaphosidae with descriptions of new species. American Mus. Nov., N:o 841.

—»— 1947, A summary of the known North American Amaurobiidae. Bull. Univ. Utah, 38 N:o 8.

—»— 1948, On some American spiders of the family Erigonidae. Ann. Ent. Soc. America, 41.

CHAMBERLIN, R. V. & IVIE, W., 1941, North American Agelenidae of the genera Agelenopsis, Calilena, Ritalena and Tortolena. Ann. Ent. Soc. America, 34.

—»— 1942, A hundred new species of American spiders. Bull. Univ. Utah, 32, N:o 13.

—»— 1943, New genera and species of North American Linyphiid spiders. Ibid., 33 N:o 10.

CHAMBERLIN, R. V. & IVIE, W., 1944, Spiders of the Georgia region of North America. Ibid., 35, N:o 9.

—»— 1945, Some Erigonid spiders of the genus Eulaira and Diplocentria. Ibid., 36 N:o 2.

—»— 1946, On several new American spiders. Ibid., 36 N:o 13.

—»— 1947, The spiders of Alaska. Ibid., 37 N:o 10.

CHARITONOW, D., 1932, Katalog der russischen Spinnen. Ann. du Musée zool., Acad. Sci. de L'URSS, Suppl. Vol. 32.

CHICKERING, A. M., 1932, Araneae from the Douglas Lake region of Michigan. I. Papers of Michigan Acad. Sci., 15.

—»— 1933, Idem II. Ibid., 17.

—»— 1934, Araneae from the Northern Peninsula of Michigan. Ibid., 19.

CHICKERING, A. M. & BACORN, G., 1933, Additions to the list of Araneae from Michigan, Ibid., 17.

COMSTOCK, J. H., 1948, The Spider Book. (Revised and edited by W. J. Gertsch). New York.

CROSBY, C. R., 1937, Studies in American spiders: the genus Aigola Chamberlin. Proc. Biol. Soc. Washington, 50.

CROSBY, C. R. & BISHOP, S. C., 1925, Studies in New York spiders. Genera: Ceratinella and Ceraticelus. New York State Mus. Bull. N:o 264.

—»— 1928 a, Orders Araneae and Opiliones, in: List of the insects of New York. Mem. 101, Cornell Univ. Agr. Exp. Sta.

—»— 1928 b, Revision of the genera Erigone, Eperigone and Catabrithorax (Erigoneae). New York State Mus. Bull. N:o 278.

—»— 1931, Studies in American spiders: genera Cornicularia, Paracornicularia, Tigellinus, Walckenaera, Epiceraticelus and Pelecopsis, with descriptions of new genera and species. Journ. New York Ent. Soc., 39.

—»— 1933, American spiders: Erigoneae, males with cephalic pits. Ann. Ent. Soc. America, 26.

—»— 1936, Studies in American spiders: miscellaneous genera of Erigoneae. Festschr. f. Embrik Strand, 2.

CROSBY, C. R. & ZORSCH, H. M., 1935, Spiders from the Lac Jean Region of Quebec. Candian Ent., 67.

EMERTON, J. H., 1882, New England spiders of the family Theridiidae. Trans. Connecticut Acad. Sci., 6.

—»— 1885, New England Lycosidae. Ibid., 6.

—»— 1894, Canadian spiders. Ibid., 9.

—»— 1909, Supplement to the New England spiders. Ibid., 14.

—»— 1911, New spiders from New England. Ibid., 16.

—»— 1915, Canadian spiders. II. Ibid., 20.

—»— 1919, Spiders. Report Canadian Arct. Exp. 1913—18. 3 H. Ottawa.

—»— 1926, New spiders from Canada and adjoining states. V. Canadian Ent., 43.

FERNALD, M. L., 1925, Persistence of plants in unglaciated areas of boreal America. Mem. American Acad. Arts Sci., 15.

FORSLUND, K.-H., 1945, Sammanfattande översikt över vid markfauneundersökningar i Västerbotten påträffade djurformer. Medd. fr. Statens Skogsförsöksanst., 34.

GERTSCH, W. J., 1933, Diagnoses of new American spiders. American Mus. Nov., N:o 637.

—»— 1934 a, Notes on American Lycosidae. Ibid., N:o 693.

—»— 1934 b, Some American spiders of the family Hahniidae. Ibid. N:o 712.

—»— 1935, Spiders from the Southwestern United States, with descriptions of new species. Ibid. N:o 792.

GERTSCH, W. J., 1939, A revision of the typical crab-spiders (Misumeninae) of America north of Mexico. Bull. American Mus. Nat. Hist., 76.

—»— 1951, New American Linyphiid spiders. American Mus. Nov., N:o 1514.

GERTSCH, W. J. & ARCHER, A. F., 1942. Descriptions of new American Theridiidae. Ibid., N:o 1171.

GERTSCH, W. J. & IVIE, W., 1936, Descriptions of new American spiders. Ibid., N:o 858.

GERTSCH, W. J. & JELLISON, W. L., 1939, Notes on a collection of spiders from Montana. Ibid., N:o 1032.

GUTSELL, B. V., 1949, An introduction to the geography of Newfoundland. Canada Dep. Mines an Resources, Geogr. Bureau, Inform. Ser. N:o 1.

HACKMAN, W., 1951, Contribution to the knowledge of Finnish spiders. Mem. Soc. Fauna & Flora Fennica, 27.

HOLM, Å., 1937, Zur Kenntnis der Spinnenfauna Spitzbergens und der Bären Insel. Arkiv för Zool., 29 A N:o 18.

—»— 1944, Revision einiger norwegischen Spinnenarten und Bemerkungen über deren Vorkommen in Schweden. Ent. Tidskr., 65.

—»— 1945, Zur Kenntnis der Spinnenfauna des Torneträskgebietes. Arkiv för Zool., 36 A N:o 15.

—»— 1950, Studien über die Spinnenfauna des Torneträskgebietes. Zool. Bidr. Uppsala, 29.

JACKSON, A. F., 1933, Results of the Oxford University Expedition to Akpatok in 1931. Araneae. Proc. Zool. Soc. London, 1933.

—»— 1937, Notes on Arctic spiders obtained in 1933—36. Ibid., 107.

DE JONG, B., 1947, Aranea displicata (Hentz) nieuw voor de Nederlandsche fauna. Tijdschr. Entom., 88.

KASTON, B. J., 1938, North American spiders of the genus Agroeca. American Midl. Nat. 20.

—»— 1945, New spiders in the group Dionycha with notes on other species. American Mus. Nov., N:o 1290.

—»— 1946, North American spiders of the genus Ctenium. Ibid., N:o 1306.

—»— 1948, Spiders of Connecticut. Connecticut State Geol. and Nat. Hist. Survey, Bull. N:o 70.

KULCZYNSKI, L., 1916, Araneae sibiriae occ. arcticae. Mem.Acad. Sci. Petrograd. 28 N:o 11.

LEVI, H. W., 1951, New and rare spiders from Wisconsin and adjascent states. American Mus. Nov., N:o 1501.

LEVI, H. W. & LEVI, L. R., 1951, Report on a collection of spiders and harvestmen from Wyoming and neighbouring states. Zoologica, New York Zool. Soc., 36.

MILLER, F., 1947, Pavoučí zvířena hadcových stepí u Mohelna. Acta publ. Soc. cogn. & cons.nat. Moraviae Silesiaque, 7.

—»— 1951, Pavoučí zvířena vrchovišt'u Rejvízu v. Jesenicích. Prirod. sbornik Ostravského kraje, 14.

MILLIDGE, A. F., 1951, Key to the British genera of subfamily Erigoninae (family Linyphiidae: Araneae): including the description of a new genus (Jacksonella). Ann. & Mag. Nat. Hist., Ser. 12 N:o 545.

MILLIDGE, A. F. & LOCKET, G. H., 1952, New and rare British spiders. Proc. Linnean Soc. London, Session 163, 1950—51.

PALMÉN, E., 1951,A survey of the Oniscoidea (Isopoda terr.) of Newfoundland. Ann. Zool. Soc. Zool. Bot. Vanamo, 14.

PALMÉN, E., 1952, Survey of the Diplopoda of Newfoundland. Ibid., 15.

PALMGREN, P., 1939, Die Spinnenfauna Finnlands. I. Lycosidae. Acta Zool. Fennica 25.

PECKHAM, G. W. & E. G., 1909, Revision of the Attidae of North America. Trans. Wisconsin Acad. Sci., 16.

REIMOSER, E., 1919, Katalog der echten Spinnen (Araneae) des Paläarktischen Gebietes. Abh. Zool.-bot. Ges. Wien, 10.

SCHENKEL, E., 1930, Die Araneiden der schwedischen Kamtchatka Expedition 1920—22. Arkiv för Zool., 21 A N:o 15.

—»— 1931, Arachniden aus dem Sarekgebirge. Unters. des Sarekgeb. in Schwed.-Lappland, 4, Zool.

—»— 1950, Spinnentiere aus dem westlichen Nordamerika, gesammelt von Dr. Hans Schenkel-Rudin. Verh. Naturforsch. Gesellsch. Basel, 61.

SEELEY, R. M., 1928, Revision of the spider genus Tetragnatha. New York State Mus. Bull. N:o 278.

TAMBS-LYCHE, H., 1940, Die norwegischen Spinnen der Gattung Pardosa Koch. Avh. Norske Videnskaps-Akad. (Mat. Nat. Kl.) 1939 N:o 6.

TULLGREN, A., 1953, Zur Kenntnis schwedischer Spinnen. I. Ent. Tidskr., 73.

WIEHLE, H., 1931, Araneidae, in: Tierwelt Deutschlands, 23: Spinnentiere, 6.

ZORSCH, H., 1937, The spider genus Lepthyphantes in the United States. American Midl. Nat., 18.